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INDEX TO VOLUME SEVENTY-FOUR

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EXCHANGE

INDEX TO VOLUME SEVENTY-FOUR.

(From July, 1921, to June, 1922)

A.

Acute Diffuse Gonnorrheal Peritonitis Without Tubal Rupture, by Dr. Maurice J. Gelpi 296
Acute Ileo-Colitis in Infancy, by Dr. M. S. Picard 172
Acute Osteomyelitis, by Dr. Isidore Cohn 505
Address of Incoming President, by Dr. Wm. H. Block 684
Address to Dr. Lewis, by Dr. E. D. Martin 776
Annual Oration, by Hon. J. R. Hunter 710
Annual Report of the Librarian 781
Annual Report of the Retiring President, by Dr. S. M. Blackshear 682
Ante-Partum Hemorrhage, The Treatment of, by Dr. J. C. Grémillion 193
Antitoxion by Mouth—**Editorial** 467
Archives of Occupational Therapy—**Editorial** 649

B.

Blood Sugar Estimation in the Diagnosis and Treatment of Diabetes, The Importance of, by Dr. F. M. Johns 244
Blood Transfusion in Obstetrics, by Dr. E. L. King 549
Bronchiectasis, by Dr. Geo. S. Bel 345
Bulletin of the Louisiana State Medical Society, 68, 454, 532, 590, 637, 686

C.

Cancer of Appendix: Report of Two Cases, by Dr. J. M. Perret 151
Cancer Prophylaxis, by Dr. J. C. Willis 367
Careful Examination as a Means of Leading to a More Accurate Diagnosis, A Plea for More, by Dr. J. E. Knighton 340
Cases of Mental Diseases, a Statistical Study of Three Thousand, by Dr. Henry Daspit 84, 305
Charity Hospital Board, The—**Editorial** 76
Charity Hospital Needs—**Editorial** 602
Charity Hospital X-Ray Department, The—**Editorial** 313
Child Welfare, by Dr. Rena M. Crawford 116
Cholecystotomy vs. Cholecystectomy, by Dr. E. Denegre Martin 204
Chronic Intestinal Toxemia, Some Causes and Some Results of, by Dr. Allan Eustis 479
Clinico-Philosophic Intepretation of Immuno-Therapy, A, by Dr. C. H. Sherman 317, 398
Colorimetric Method for Determining Gastric Acidity, A Clinical Study of the (Preliminary Report), by Dr. Daniel N. Silverman 627
Conservation of the Gall-Bladder, by Dr. F. W. Parham 650
Cough and the Laryngologist, by Dr. Arthur I. Weil 668

D.

Diabetes and Pregnancy, by Dr. I. I. Lemann 492
Diffuse Gonococcal Peritonitis; Report of a Case, by Dr. E. A. Ficklen 318
Diagnosis and Susceptibility in Hay-Fever, by Dr. Wm. Scheppegrell 444
Diagnostic and Therapeutic Value of Lumbar Puncture in Lethargic Encephalitis, The, by Dr. G. H. Hauser 331
Diagnosis and Treatment of Perforating Gastric Ulcer, With Report of Two Cases, The, by Dr. John L. Wilson 473
Dr. Ernest Lewis—**Editorial** 739
Dr. John B. Elliott, Sr.—**Editorial** 77

Dr. Pierre Rouanet, The Discoverer of the Cause of the Heart Sounds, At One Time a Practitioner in New Orleans, A Tribute to, by Dr. Edmond Souchon 314
Dr. Samuel R. Oliphant—**Editorial** 545
Drug Addiction and Its Relation to Public Health, by Dr. M. W. Swords 269

E.

Eczematoid Dermatitis Due to Ringworm Fungus, by Dr. Ralph Hopkins 336
Enlargement of the Adult Thymus—**Editorial** 543
Epidemic Encephalitis, by Dr. L. V. Lopez 90

F.

Factors Influencing the Rate of Mortality in Surgery of the Thyroid Gland, by Dr. J. M. Batchelor 468
Fractures of the Base Treated by Repeated Spinal Punctures, Some, by Dr. L. B. Crawford 374
Fuchs Lectures, The—**Editorial** 544
Fundamental Properties and Therapeutic Uses of Radium, The by Dr. Chas. H. Voss 290
Fusiform Aneurysm of the Ascending Portion of the Aorta, Encircling of a, by Dr. Tuffier, Paris, (Translated by Dr. H. E. Bernadas) 547

G.

Gall Bladder Disease and Its Treatment, by Dr. A. L. Levin 255
Gastro-Intestinal Cases, Some Interesting, by Drs. L. A. Fortier and T. T. Gately 188
Gorgas Memorial, The—**Editorial** 465

H.

Hemoglobinuria—**Editorial** 223
Hemorrhage Into the Upper Digestive Tract, With Special Reference to Arterial Diseases as a Cause, by Dr. Sidney K. Simon 13
How Apothesin Compares with Other Agents Used in Spinal Analgesia, with Special Reference to a Near Accident in a Case of Prostatectomy, by Dr. P. J. Gelpi 586
Hypertrophied Anal Papillæ, by Dr. A. G. Heath 121

I.

Importance of Securing Bony Union Following Fracture of the Patella, The, by Dr. E. Denegre Martin 4
Infected Bladder and Kidneys Producing Primary Symptoms and Unrecognized as Such on Account of Malformation of Sacrum, The Report of an Interesting Case, by Dr. W. P. Bradburn 633
Infection with the Flagellates, by Dr. Elliott C. Prentiss 232
Inorganic Constituents of the Blood as Related to Internal Medicine, Recent Work On, The, by Dr. W. Dennis 8
Intolerance for Milk in the Nursling—**Editorial** 393

J.

Juvenile Deforming Osteochondritis, with Report of Cases, by Dr. E. D. Fenner 659

K.

Kidney Surgery Under Local Anesthesia, by Dr. C. W. Allen 300

L.

Last Call—**Editorial** 647
Leprosy Cured by Anthrax Vaccine, Two Cases of, by Dr. J. N. Roussel 250
Long-Continued Masturbation in a Girl, Cured by Fright, A Case of, by Dr. Everett M. Ellison 160

19052 554229

M.

Malarial Hemoglobinuria, by Dr. F. M. Thornhill 224
Malarial Infection as a Possible Cause of Symmetric Gangrene of the Extremities, with Report of a Case, by Dr. J. Birney Guthrie 604
Management of a Smallpox Outbreak, The, by Dr. John Callan 501
Management of the Chronic Nephritic, On the, by Dr. A. A. Herold 418
Mississippi Valley Medical Association—**Editorial** 148
Monument to Finlay—**Editorial** 222
Mortality From Cancer in the South, Abstract of Address on the, by Frederick L. Hoffmann, LL.D. 35
Mortuary Report—74, 146, 220, 310, 392, 464, 542, 600, 646, 696, 738, 790
Municipal Refuse Collection and Disposal, by Dr. H. R. Crohurst 354

N.

Necrosis of Skull with Resulting Meningocele; Repair by Tibial Transplant, by Drs. J. T. Nix and J. M. Perret 529
Needed Hygiene, by Dr. Maud Loeber 437
Neglected Teeth of Children, The, by Dr. J. Ross Snyder 273
Nerve Blocking Anesthesia, by Dr. Wm. M. Johnson 279
New Orleans Public Health Institute—**Editorial** 544
News and Comment—63, 138, 212, 306, 386, 457, 535, 593, 641, 689, 739, 783
Nitrous Oxide—Oxygen Analgesia and Anesthesia in Obstetrics, The Use of, by Dr. T. B. Sellers 109
Non-Specificity of Vaccines, by Dr. Victor E. Kea 675
Notes on Tropical Diseases (Translation by Lodilla Ambrose) 717

O.

Observations as to Prognosis in Insanity, Some, by Dr. C. V. Unsworth 101
Of Good Augury—**Editorial** 1
Oral Focus in So-Called Sciaticas. Two Interesting Case Histories, by Dr. William A. Lurie 622

P.

Physician's License Tax, The—**Editorial** 601
Pituitrin in Obstetrics, by Dr. C. Hal Cleveland 700
Practical Value of the Slide Diagnosis of Gonorrhea and Other Pyogenic Infections of the Genito-Urinary Tract, The, by Dr. A. Mattes 414
Prepare for the State Society Meeting—**Editorial** 603
Problems to Be Solved by the Medical Profession in Co-Operation with the Public, by Dr. J. E. Knighton 704
Preventable Vocational Eye Injuries, by Dr. William B. White 126
Proceedings of the Staff of Hotel Dieu 210
Proceedings of the Staff of Touro Infirmary 47, 131
Publications Received 72, 145, 219, 462, 599, 695, 736, 789

R.

Radium Therapy, by Dr. Adolph Henriques 283
Raynaud's Disease, Report of a Case of, by Dr. R. S. Crichlow 556
Recent Progress in Ophthalmology, by Dr. C. A. Bahn 182
Removal of a Twenty-Penny Wire Nail from the Bladder, by Dr. H. W. E. Walther 149
Reminiscences, by Ernest S. Lewis, M. D. 744
Removal of Foreign Bodies from the Eye, by Dr. H. Dickson Bruns 559
Report of the House of Delegates to the General Assembly 721

Report of the Secretary for 1921 726

Reputed Vesicating Properties of the Granary Weevil, **Calandra Granaria,** The, by William A. Riley 678

Rest in Tuberculosis, by Dr. E. D. Price 395

Restrictions in Medical Practice—**Editorial** 3

S.

Safety Factors in Supra-Pubic Prostatectomy, by Dr. A. Nelken 78

Serum Therapy by Mouth—**Editorial** 221

Sinuses, The, by Dr. John T. Crebbin 618

Sinus Involvement as a Sequel to Contagious and Infectious Diseases, Unsuspected, by Dr. E. V. Whitaker 155

Situs Inversus Viscerum Totalis, by Dr. Lester J. Williams 362

Southern Medical Association, The—**Editorial** 312

Specific Treatment of Malaria, by Dr. C. C. Bass 521

State Medical Society Meeting—**Editorial** 697

State Society Matters—**Editorial** 394

Statistics in Louisiana, by Dr. Oscar Dowling 432

Suggestive Mixed Treatment in Chronic Malaria, by Dr. Thos. E. Wright 612

Surgery of the Biliary Tract, by Dr. J. A. Danna 196

T.

Test for Early Tuberculosis, A—**Editorial** 311

Tetany After the Third Partial Thyroidectomy, Report of a Case of, by Dr. H. B. Gessner 382

The New President—**Editorial** 699

Treatment of Empyema, The, by Dr. F. W. Parham 571

Treatment of Granuloma Inguinale with Exhibit of Cases, Preliminary Report On, by Drs. W. A. Reed and Monroe Wolf 25

Treatment of the Soul, by Dr. J. B. Elliott 425

Treatment of Urethritis, by Dr. M. H. Foster 165

Tribute to Dr. Lewis, by Dr. Matas 764

Tribute to Dr. Lewis, by Dr. Parham 774

Tribute to Dr. F. L. Hoffman, by Dr. Rudolph Matas 42

Tuberculous in General Hospitals, The—**Editorial** 75

Typhoid Fever—**Editorial** 699

V.

Vacation—**Editorial** 147

Valedictory—**Editorial** 741

W.

Welcome on Behalf of the Local Profession, by Dr. Fayette C. Ewing 778

BOOKS REVIEWED IN VOLUME SEVENTY-FOUR.

Collected Papers of the Mayo Clinic—Mellish 71

Diagnosis and Treatment of Brain Injuries—Sharpe 70

Diseases of the Nose and Throat—Tilley 71

Essentials of Histology, The—Schafer 72

Fundamentals of Human Anatomy—Pitzman 462

Manual of Practical Anatomy—Cunningham 461

Medical Record Visiting List, The 462

Text-Book of Embryology—Prentiss 461

Zeigler's General Pathology—Symmers 72

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Vol. 74 JULY, 1921 No. 1

EDITORIAL.

OF GOOD AUGURY.

There took place here, in New Orleans, what we forecast will be of great benefit to our hospitals in general and the Charity Hospital in particular.

This was simply what was termed a smoker, given by the members of the Board of Administrators of the Charity Hospital to the Chiefs of the Visiting Staff of the hospital. In parenthesis it might be said that the word ‘‘smoker’’ was used by the hosts, in their modesty, to denominate what proved to be a bountiful and delicious dinner. However, the repast itself was a mere incident; or, we might say paradoxically, the material part of the affair was immaterial. What counted was what was behind the cordial invitation and its cheerful acceptance; what will count still more is what should and, we believe, will come from the closer relationship between the administrative and the professional heads of the hospital.

This relationship heretofore has not been as it should. Years ago the hospital visiting staff organized, naming officers and a conference committee, informing the board of its action and its readiness to confer with the board upon the invitation of the latter, as the staff wished to indicate its lack of desire to intrude although prepared to advise or suggest in such matters as might be considered within their province. Following this, the board very politely acknowledged the communication and thus the matter stood—no conference was ever requested. Can it be possible that, during a term of years, nothing happened which could justify an interchange of ideas concerning the medical and surgical management, the technical side of the hospital?

It could not be said justly that there was antagonism between the board and the staff, but there was an undefinable something in the atmosphere which did not tend towards cordiality, an intangible feeling which did not encourage co-operation. Now, what is more necessary for the efficient management of any hospital than co-operation? In one, like our Charity, not overburdened with revenue, it is all the more essential. Just as there must be team-work among the medical staff, on the one hand, and harmony among the members of the board, on the other, so must there be co-ordination and co-operation between the management and the staff.

The staff expressed its understanding of these principles a long time ago and now, at last, a hospital board has responded in the right spirit; in fact, has taken the initiative in cultivating the proper feeling between board and staff, because that was the purpose behind the smoker or dinner. It was a "get acquainted" and a "get together" movement. The members of the board deserve the greatest credit for this "gesture", as our French friends would put it, and it will succeed. The few little talks during the function gave evidence of complete and mutual understanding and appreciation. This feeling will develop and grow as opportunity for co-operation occurs and enlarges, and we see unlimited possibilities for increased efficiency, which means better care for the indigent sick and better training for the physicians.

RESTRICTIONS IN MEDICAL PRACTICE.

Resolutions recently passed at the annual meeting of the American Medical Editors' Association invite attention to the restrictions imposed by the Volstead Act, calling them "obstacles to the free pursuit of honest medical judgment." The point at issue is the right of the physician to select his remedies and to decide what doses of these remedies respective patients require.

This principle has nothing to do with the question of prohibition and the resolutions should not be considered as propaganda either for or against that measure. Prohibition is part of the organic law of the country and, like all other laws, should be either enforced or repealed, yet this fact should not prevent the preservation of the necessary rights of the physician in the interests of health and public policy.

We know of a number of physicians who have declined to qualify for the right to prescribe any alcoholics because of the onerous details accompanying the permission, but who, however, feel that they are thereby unduly restricted in the use of their therapeutic judgment.

It is but natural therefore, that the profession should, in the words of the Editors' Association, "protest against further undue regulation of therapeutic procedure by statutes or by administrative interpretation or regulation and request of the proper authorities a review and revision of such existing statutes or rules as may be unduly restrictive of the therapeutic procedure of physicians."

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE IMPORTANCE OF SECURING BONY UNION FOLLOWING FRACTURE OF THE PATELLA.*

BY E. DENEGRE MARTIN, F. A. C. S., NEW ORLEANS.

A report of the few cases I am presenting to-night dates back over a period of twenty-five years and is the result of a pretty thorough study of the knee joint and the many suggestions offered to restore its function after injury. In this article I shall confine myself to fractures of the patella. I cannot agree with some authors that this is a mere sesamoid bone and plays but a minor part in the function of the knee joint. This error no doubt arises from the fact that the legs are used most when erect and when in this position are easily flexed and extended; for ordinary purposes of walking this may be true but in order to obtain one hundred per cent efficiency the patella is an absolute necessity; why not, then, employ a technic in the restoration of function which will insure the greatest efficiency? I wish especially to stress the function, as well as the importance of preserving this function, by showing, if I can, that the patella plays a most important role in controlling and perfecting the movements of the knee joint.

The knee through a hinge or ginglymoid joint, has a peculiar sliding motion, which is so controlled by the crucial and lateral ligaments that some portion of the surface of the condyles is at all times in contact with the head of the tibia resting in the sulci formed by the semi-lunar cartilages. Extension is produced by contraction of the quadriceps extensor which forms the long arm of a lever of the first degree, the patella the fulcrum, the patella ligament the short arm. You will note from the skiagraph that these tendons and ligaments do not come in contact with the bone surfaces but are held apart from the condyles and head of the tibia by the patella and that no matter at what angle the leg is flexed the patella rests upon the condyles in such a way as to allow the greatest force to be exerted through it as a fulcrum—that is, it is raised at the highest point above the surface, and of course the higher the fulcrum within certain limits the greater the force which can be applied to the leg. If therefore the patella did not exist and the tendon was continuous from the quadriceps to the tibial tubercle no forces possible by muscle contraction would be great enough to raise the leg if flexed on the thigh, when the slightest resistance was met, as for instance in a squatting position. If therefore the patella cannot be restored to its normal contour after fracture, the efficiency of the limb is impaired just in proportion to the dropping of the ends, that is, lowering of the fulcrum, or to the extent of scar tissue between the fragments, for the greater the separation the weaker the limb. What, therefore, does preservation of the normal position of the patella and bony union mean? One hundred per cent efficiency. The joint must be opened, the torn edges of the capsule removed from the opposing surfaces of the bone and the two bony surfaces brought into close and perfect apposition, and above all secured against refracture. The elaborate technic of Albee, Bricknell, Groves and others is unnecessary. The mere suturing of the capsule with catgut is not always to be depended upon, as shown by statistics. In 38 cases reported by Scudder only 81% showed complete union, 18% by bridge of bone, which means lowering the fulcrum, and 18% absolutely no bony union. These are about the results reported by others. Corner's statistics show that refracture occurs in from 69 to 89% in all cases within one year. No bony union means further separation of fragments or loss of power. Then, too, the limb must be secured by an external splint over an extended period. I have seen three cases give way after suture within three months of operation, one was not resutured but treated with a figure of 8 bandage and splint, and was nearly a year securing a serviceable limb and I do not think ever obtained complete flexion. The second was treated by me as will be described later. The third was resutured, but too recently to know the result. The technic I now wish to suggest for your consideration was adopted in five cases, perfect function was restored except in the last which is too recent to report, though the man is at work. An incision is made across the patella regardless of the line of fracture, the skin is retracted and all interposing tissue between the fragments of bone removed, a double vulcella is then hooked into the upper and lower fragments, one or more catgut sutures are placed on either side to hold the fragments of bone in perfect apposition and a piece of annealed wire, about No. 16, is then threaded on a heavy surgical needle and passed deep into the tendon above and as near the patella as possible, and through the ligament below in the same manner, the wire is then tightened across the top of the fragments, the ends twisted and buried. This acts as an internal splint, is easily applied and a guarantee against refracture. Further advantages lie in the fact that a splint need be applied for such time only as there is pain and swelling resulting from the operation. Patients can be put on crutches much earlier and after the first week allowed to begin motion in the knee, at the end of six weeks full flexion is possible. Where suture alone is employed the leg should be put up in a splint at an angle of 165°; when motion is begun it is done by extending the leg and not flexing, whereas if the leg is first put in a straight splint there is always danger of tearing the capsule, as adhesions about the joint give way suddenly and the force exerted is often sufficient to rupture the line of union in the soft tissues as ossification is not complete in this bone for several months.

---

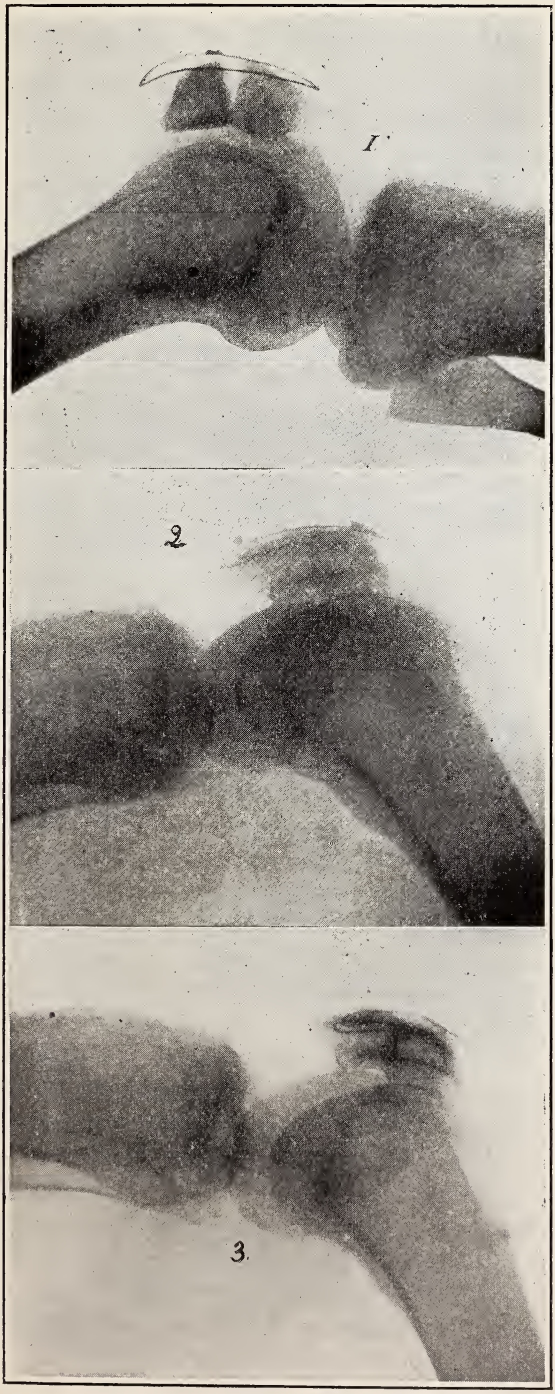
*Read before the Orleans Parish Medical Society, March 14th, 1921.

Any surgeon who has looked into a refractured joint is easily convinced of the complicated pathology to be reckoned with and in these cases especially is the technic herein suggested applicable.

I will now show you skiagraphs of three of the five cases treated; the first two are one hundred per cent good, the last would be considered ordinarily a perfect result, but in my opinion dropping of the ends of the patella lowers the fulcrum and though the patient is satisfied and believes his leg is as good as before, I cannot agree with him; the result in this case is due to faulty technic and I am glad to be able to present it to you as you will learn the same lesson from failure that I have.

A comparison of these skiagraphs with others, where the suture alone was used will, I think, convince you of the merits of the operation.

A deeper bite into the tendon and ligaments should have been taken. Compare these with any where the catgut suture was used as to result and time of convalescence and I think you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will easily satisfy yourself as to the advantages of the wire splint.

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RECENT WORK ON THE INORGANIC CONSTITUENTS OF THE BLOOD AS RELATED TO INTERNAL MEDICINE.*

BY W. DENIS, M. D.

(From the Laboratory of Physiological Chemistry of the Tulane Medical School, New Orleans.)

More than a decade has passed since a description of the first of the so-called micro methods for the determination of the non-protein constituents of the blood was published, and, during the years which have elapsed since that time, this method of examination has become increasingly popular, until in many clinics determinations of blood sugar, fat, uric acid, creatinine, urea, etc., have become routine procedures. The phenomenal success of this method of investigation was in all probability due to the fact that there was presented for the first time a technique for the chemical examination of blood requiring little expenditure of time, relatively simple apparatus, and above all small amounts of blood. As long as the methods of blood analysis demanded 200 c. c. of blood and the expenditure of five hours of time on the part of the laboratory worker, as was the case in the early methods used for uric acid determinations, it is impossible to conceive of the general utilization of such technique in the clinic.

Inspired probably by the success of the above line of work, certain investigators have during the past five years turned their attention to a study of the inorganic constituents of the blood, with the object of working out methods for the quantitative determination of these substances which would be sufficiently simple to permit of use on clinical material. This study is still in its infancy, but the results so far obtained make it justifiable to predict that within a few years the clinician will require that in certain cases the blood examination include the determination of such constituents as calcium or phosphates with as great frequency as he now desires data on blood sugar or urea. The first step in the solution of any problem consists in the elaboration of experimental methods of an accuracy sufficient for the work in hand. In the case of several of the inorganic constituents of blood, up to a few months ago no experimental methods suitable for clinical work have been available. Among the constituents of this group may be mentioned, sodium, potassium and magnesium. Several analytical methods for the quantitative determinations of these elements in blood have recently been described(1), so that it is probable that we may soon possess more definite information regarding the distribution of these substances in the blood in pathological conditions.

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*Read before the Orleans Parish Medical Society, March 14, 1921.

As the matter stands at present our knowledge regarding magnesium in blood in pathological conditions is practically nil. As regards sodium and potassium the recent interesting experiments of McCann(2), of Mac Callum(3), and his collaborators, and of Hastings(4) and Murray, have made it extremely probable that at least some of the symptoms of pyloric obstruction are due to disturbed salt equilibrium as an increase in the alkaline reserve (and probably in the sodium and potassium concentration), and a marked decrease in the chloride concentration of the blood have been invariably noted in this disorder.

Several simple and accurate methods for the quantitative determination of chlorides in whole blood and plasma are now available and, as a result, our knowledge concerning chloride metabolism in disease is being rapidly increased. The connection between chloride retention and nephritic edema was first pointed out by the French school of internists, the names of Widal(5) and of Ambard(6) being especially associated with the early development of this subject. These investigators made use of blood analysis for the investigation of their cases, but while their views regarding the connection of abnormalities of chloride metabolism and certain types of edema gained wide acceptance, the utilization of chloride determinations in blood as a practical clinical procedure gained general use in this country only after publication of the investigations of McLean(7). During the past five years half a dozen micro methods for the determination of blood chlorides have been published(8), so that weapons for the attack are now available in abundance. As a result the utilization of blood chloride determinations for guidance in the feeding of nephritis has become popular. Modern work has corroborated the findings of Widal and of Ambard in their contention that the excretion of nitrogen and of chlorides are frequently independent functions of the kidney, and a preliminary determination of blood chlorides before the inauguration of a ''salt free'' diet in nephritic cases, together with subsequent observations made during treatment, would appear to offer the only method of determining whether the frequently irksome restriction in chloride intake is of real benefit to the patient. The fact has been frequently noted that in certain cases of nephritis the blood chlorides have (after long periods of ''salt free'' dietaries) been distinctly below normal.

Recently Allen(9) has suggested the possibility of a casual relation between chloride retention (as shown by increased plasma chloride) and certain cases of hypertension. Should further clinical observations prove the truth of this hypothesis the increased practical usefulness of the determination of blood chlorides is apparent.

Another inorganic constituent of blood which has lately been shown to be of considerable interest in certain pathological conditions is phosphorus. This element exists in the blood in four types of combination(10) viz., as inorganic phosphates as, for example, sodium or potassium phosphate; in lipoid form (lecithin); as nuclear protein; and in combination as the so-called ''organic phosphates'' which are believed to consist of or be allied to glycero phosphoric acid. So far only the inorganic phosphate has been investigated in connection with pathological material and discussion will therefore be limited to this fraction. The importance of blood phosphates in connection with the maintenance of the acid base equilibrium of the organism was first pointed out by L. J. Henderson(11); later Greenwald(12) and Marriott and Howland(13) reported the presence of greatly increased amounts of inorganic phosphates in the plasma in a few cases of nephritis. In 1920, Denis and Minot(14) found as the result of the study of a considerable number of blood samples that 65 per cent of nephritic and cardiorenal cases taken at random from the material available at that time in the wards of the Massachusetts General Hospital showed unmistakable evidence of phosphate retention. It was furthermore noted that fatal cases showed a rapid and progressive increase in plasma phosphate, increases of more than ten times the maximum normal value being not uncommon; on the other hand the non-fatal cases even though the patient was seriously ill presented a relatively slight increase.

It is of interest to note that there is no definite relation between the level of inorganic phosphate, non protein nitrogen and of the alkaline reserve. In several cases in which the alkaline reserve was extremely low, and the level of inorganic phosphate high, intravenous injection of sodium bicarbonate given in amounts sufficient to produce a distinct alkalosis was absolutely without effect on the level of the plasma phosphate. The results so far obtained would suggest the possible prognostic importance of the determination of inorganic phosphates in the plasma of persons suffering from nephritis or allied disorders.

The literature abounds with reports concerning the presence of abnormal amounts of calcium in the blood in a multitude of pathological conditions, and as a result the therapeutic administration of calcium salts has been advised as being of value in a host of diseases ranging from epilepsy to urticaria. A cursory glance over the work of these early investigators indicates at once the chemical impossibility of measuring blood calcium by the technique then employed. Of late years the developments in micro chemistry have brought forth several relatively accurate methods for the quantitative determination of small amounts of calcium(15), and as a result our knowledge concerning the level of blood calcium in disease has been placed on a firm foundation. So far no condition has been noted in which abnormally large amounts of calcium are found. It has been demonstrated however that in parathyroid tetany(16), pneumonia(17), acute rachitis(18) and uremia(19) there is a marked decrease in the calcium content of the plasma.

That the tetany of parathyroidectomized animals or of rachitic children, or the convulsions of uremics is due to a decreased blood calcium alone is questionable. It would seem rather that such abnormal manifestations might result from a disturbance of the equilibrium between calcium and other inorganic electrolytes of the blood. The investigation of the problem from this standpoint must await the time when analytical methods are available which will permit the quantitative determination of all the inorganic constituents in a single relatively small sample of blood.

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DISCUSSION.

Dr. Allan Eustis: The Orleans Parish Medical Society is indeed fortunate in being able to hear from one who has been a pioneer in the development of the chemistry of the blood, and to whose work is due many of the present methods used in examining same.

I have had no personal experience in examining the inorganic constituents of the blood but I take this opportunity of discussing the methods used in determining the ammonia content of the blood, inasmuch as ammonia is included in inorganic chemistry. I wish to ask Dr. Denis whether she knows of any method whereby ammonia can be differentiated from the volatile amin as by the present method the latter will pass over into the standard acid and will be titrated as ammonia.

Dr. Parham: I may not be in order as Dr. Denis did not refer to this subject in her paper, but as Dr. Garrey in his discussion dwelt at length upon the influence of citrate of soda in the blood, I thought it might be interesting to call attention to recent investigations reported before the New York Academy of Medicine in which it was distinctly shown that although the citrate in vitro prevented the coagulation of the blood, when introduced into the circulation it had a distinct effect upon the time coagulation, reducing it in a few minutes to less than 50%. The effect of this is so marked that it has a distinct use as a hemostatic, and in the absence of a donor of blood may be used in hemorrhage and hemorrhagic states as a very useful hemostatic. I would like to ask Dr. Garrey how he would explain this apparently paradoxical effect. The reader of the paper before the New York Academy of Medicine said that after considerable investigation he had come to the conclusion the effect was due to the increase of prothrombin in the blood. I am sure the society will be very glad to hear Dr. Garrey's views on the subject.

HEMORRHAGE INTO THE UPPER DIGESTIVE TRACT, WITH ESPECIAL REFERENCE TO ARTERIAL DISEASE AS A CAUSE.*

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Introductory. Within a comparatively short period, I have had occasion to observe the occurrence of massive hemorrhage into the digestive tract in three patients, as a result, apparently in each instance, of a diseased state of the arterial system with especial localization in the vessels of the stomach and duodenum.

While the presence of arterial disease could not be verified, because of lack of opportunity for direct inspection at the site of the hemorrhage, nevertheless the close association exhibited by the vascular accident in each case, with a manifestly morbid state of the arterial system as a whole, has seemed to me sufficient to warrant the assumption of some definite relationship between the two conditions.

Notwithstanding the fact that rupture of a diseased vessel wall with ensuing massive hemorrhage is an event of common occurrence in other organs, it would seem from a careful survey of the literature, that a similar accident along the gastro-intestinal tract is one rarely if ever, encountered.

That such a possibility does exist, however, and that its occurrence might prove to be the source at times of profuse gastro-intestinal hemorrhage is at least strongly suggested in a critical review of the following three cases:

REPORT OF CASES.

Case No. 1. Rosa N., age 68, mother of nine children, seven living. Had the various infectious diseases of childhood in mild form. At the age of 22, a moderately severe attack of typhoid fever. During the yellow fever epidemic in the South in 1867, the patient claims to have had a severe form of the disease. After her 30th year she had several attacks of acute, articular rheumatism, the last of which occurred eight years ago. The menopause took place during her 48th year and was accompanied by many of the usual nervous phenomena. While up to this time there had been no history of dyspeptic trouble, now a tendency to gaseous distention of the bowels was noted, occasioning much distress at intervals, mainly in the form of sticking pains in the left upper abdomen. The bowel evacuations have always remained free and regular.

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*Read before the Orleans Parish Medical Society, April 11, 1921.

In 1904, during the patient's 54th year, the first attack of hemorrhage from the gastro-intestinal tract occurred. The day preceding the attack there had been some slight digestive disturbance, for which the attending physician had prescribed a calomel purge. During the early morning hours of the following day, the patient was awakened with a feeling of intense nausea and faintness. and shortly after vomited large quantities of dark, clotted blood. There was extreme languor and other evidences of shock incidental to a large hemorrhage. In the afternoon of the same day a recurrence of the blood vomiting took place, even more copious than before, the evacuation simultaneously of dark red and tarry feces. A tentative diagnosis of latent peptic ulcer was made at the time by the physician in attendance, in explanation of the hemorrhage. A detailed plan of medical treatment for peptic ulcer was followed, covering a period of six weeks, resulting in apparently complete recovery. At this period the patient had been living in a small Alabama city, but in 1908 she moved her residence to New Orleans, when she first came under my observation.

No further evidence of disturbance in the digestive organs had taken place, but for a year previous, she had noticed blood in the urine at intervals, which had given rise to some anxiety. Examinations of the urine made by me in 1908 showed, besides the presence of small quantities of blood, occasional hyaline and granular casts. There was a moderate hypertrophy of the left heart present and the blood vessels were found to be thickened but were not calcareous. The systolic blood pressure at this time was 180.

A mild form of hematuria persisted intermittently from this time without other evidence of genito-urinary disease other than that of a chronic arterio-sclerotic kidney. Cystoscopic examination did not reveal any bleeding surface in the bladder so that in the opinion of Dr. Nelken, who was called into consultation the hemorrhage appeared to be mostly the result of a slow seepage of blood into a sclerosed kidney in the presence of an increased arterial tension.

In January, 1917, without any prodromal symptoms, a second hemorrhage into the digestive tract occurred. According to the patient's statement, the amount of blood vomited on this occasion was not quite as large as in the previous attack. However, from personal observation, the quantity of the vomitus reached fully a pint and a half and the stools remained tarry in color for five days.

Immediately prior to the attack, the blood pressure had been noted at 240 systolic and 115 diastolic. As a result of the copious blood letting, there was a prompt fall in the systolic pressure to 150.

In spite of the profuse nature of the hemorrhage. the patient made comparatively rapid recovery and within six weeks the blood pic-
as since remained constantly around the 200 systolic and 110 dias-
a tendency to progressive ascendency in the arterial tension which
ture returned to the normal. Concurrently, however, there appeared

tolic point. Repeated examinations have subsequently failed to show the presence of an occult blood reaction in the stools.

Status Presens. The patient is of the obese type, with small stature and florid complexion. The surface arteries are hard and moderately nodulated. The pulse is full and bounding and of regular rhythm. The heart is enlarged to the left, past the mammary line. A soft systolic blow can be heard at the apex, transmitted to the left. At the aortic area, the sounds are distinctly roughened, and the aortic closure is loud and sharp.

The abdomen is soft and allows of easy palpation. Neither the liver nor the splenic edges can be felt. No areas of tenderness have been noted at any time.

The blood examinations reveal nothing abnormal. Wasserman reactions are negative. The urine is of a constant low specific gravity and contains occasional casts. Blood cells are frequently present, as described above.

The general health of the patient has remained good in the interim since recovery from the last hemorrhagic outburst.

Epicrisis. In the history and course of this case, the arterial factor would seem to have played a most important role. There is unmistakable evidence of a general arterio-sclerosis present, and the persistent hemorrhage into the genito-urinary tract is in itself apparently of arterial origin. The two attacks of massive gastric hemorrhage, appearing without previous digestive disturbance, are likewise suggestive of a direct arterial origin.

Case No. 2. J. T. N., male, age 42, married, insurance solicitor by occupation. Had the yellow fever at the age of 2 years. In 1898, had one attack of malarial fever of the intermittent type, which he claims lasted three months. Five years ago, he had a severe form of measles. Venereal infection is denied **in toto** and the patient has never been addicted to the use of alcohol or tobacco.

Shortly following the attack of malarial fever, a tendency to repeated and mild gastro-intestinal disturbances developed, which the patient speaks of as "being bilious." These spells have partaken of vomiting, with cramp pains through the abdomen, and a diarrhea lasting two or three days at a time.. They followed closely indiscretions in diet, but there have been no recurrences during the past eight years.

Present History.· In May, 1916, without previous warning of any kind, a very copius hemorrhage from the digestive tract occurred. A sudden feeling of great weakness was the first evidence of the impending trouble. This was followed within a few hours by the passage of large, tarry evacuations from the bowels, which continued at intervals for four days. There was great pallor and other evidence typical of a severe hemorrhage.

A diagnosis of peptic ulcer, probably located in the duodenum, was made by the attending physician, and the customary bed rest with restricted diet was ordered, extending over a period of six weeks. The patient recovered from this attack without further incident and experienced no further trouble for six months. At the end of this period (October, 1916) there was a repetition of the previous hemorrhagic attack, again evidently from the upper intestine, but in somewhat less volume than before.

The case was again treated as one of simple peptic ulceration and, following his convalescence, another interval of six months intervened before the onset of the third hemorrhage.

This occurred in May, 1917, and proved to be more profuse than the preceding ones. On this occasion, the onset was characterized by the vomiting of a considerable quantity of clotted blood, followed shortly after by the passage of tarry stools.

I had the opportunity of seeing the patient for the first time four days after the onset of this attack, through the courtesy of Dr. Leo Burthe. At that time there was great prostration and a high degree of anemia (hemoglobin 60%; red cell count, 2,095,000, with a few erythro-blasts).

The physical examination showed the patient to be of good physical development, with a tendency to obesity. No edema or jaundice was noted. The heart was found to be enlarged slightly to the left, with a vigorous systolic impulse. No cardiac murmur could be detected. The surface arteries were moderately thickened. The pulse, full and rapid. The systolic pressure measured 170; diastolic 100.

Nothing abnormal was found in the urine. Wassermann reaction was negative.

The abdomen showed normal contour without rigidities or sensitive areas. The liver and spleen could not be palpated.

Once more the patient was kept in bed for six weeks under greatly restricted diet. The occult blood reaction persisted in the stools for fully three weeks. However, there was a gradual return to the normal blood picture and the patient was, in fact, able to return to his business duties within two months. Since this time there has been a mild recurrence of the intestinal hemorrhage on one occasion (October, 1917). This did not necessitate the patient's returning to bed, however, nor did it interfere with his usual daily business routine.

The blood pressure readings in this case, between the intervals of the gastro-intestinal hemorrhages, have been persistently high, in spite of all plans of treatment directed towards its reduction. The highest systolic pressure recorded was 230 in December, 1917, and the minimum 190, in March of this year. He claims, notwithstanding, to feel entirely well, but looks forward with some anxiety to the completion of the next six months' period, when experience has taught him a hemorrhage into his gastro-intestinal tract might be expected.

A careful radiological examination of the digestive tract at this period revealed a small filling defect in the duodenal cap, immediately beyond the pyloric ring. This was visible alike under the fluoroscope and on the plates. It was impossible to determine however whether this defect represented a scar from a healed duodenal ulceration, or was merely the evidence of a tissue break at the site of a previously ruptured duodenal vessel.

Even if we assume a true ulceration as the basis for the repeated hemorrhages in this case, the determining influence of the constantly increased arterial tension, with other evidence of arterial disease, to my mind, can scarcely be denied.

Case No. 3. E. S., male, age 57, occupation, insurance agent.

Since the year 1913, this patient had been under the care of Dr. E. L. King and Dr. C. L. Eshleman of this city, to the latter of whom I am much indebted for the early notes of the case.

Previous Illness.—The patient had always been in good health, with the exception of one attack of continued fever, probably of malarial origin, which occurred during 1900 and lasted three months. In 1909, application for life insurance was refused the patient, on the ground that his urine contained some albumen. He had exhibited no symptoms of kidney disease up to this time, however, and was inclined to pay little attention to this finding. Nevertheless, on the advice of his physician, he had tests of the urine made at subsequent intervals and was informed that albumen was constantly present. For several years back there had been a history of frequent urination at night, but this the patient attributed to the habit he had developed of drinking large quantities of water with his evening meal. The patient had always been a heavy eater and acknowledged using alcohol to some extent. He likewise smoked excessively.

The physical examination, made in 1913 by Dr. Eshleman, showed a well-developed physique with a tendency to corpulency (average weight, 209 lbs.). A few slightly dilated venules on the nose and cheeks were noted. No diseased condition of the eye, nose or throat was found.

The heart was hypertrophied with the point of maximum intensity in the nipple line. The second aortic sound was accentuated, but no murmurs were present. The superficial blood vessels were barely perceptible. Systolic pressure, 175.

The liver, normal in size. Spleen, not palpable. The abdomen showed no evidence of portal stasis and was otherwise negative. Reflexes, normal.

The urine examinations, made at frequent intervals, revealed a constant low specific gravity (1005-1010). The amount of moist albumen varied, but was never high. Occasionally hyaline casts could be demonstrated.

The first evidence of serious mischief in the patient's condition occurred in May, 1915. His health for several months previous had been unusually good, when suddenly he was seized with a fainting spell lasting several hours. Within a few hours, the cause of this was found to come from a large hemorrhage into the upper intestinal tract. The patient was confined to bed for several weeks, under treatment for a supposed peptic ulcer. After convalescence, the diagnosis of peptic ulcer was, in fact, confirmed by a radiologist, in the stage of quiescence or healing.

Following this attack, the health status of the patient remained unusually good for two years. He was able to follow his somewhat arduous work without stint and did not suffer any digestive disturbance.

In the early part of 1917, however, warnings of a failing circulation began to show. He began to note dyspnea, even upon moderate exertion, and had spells of air hunger at night. After eating, he likewise experienced a heavy, full feeling accompanied by eructations.

Shortly after, he took to bed with a so-called attack of acute influenza, which proved to be the precursor of a series of events which eventually terminated in his death, April 2, 1918. I saw him for the first time on March 21, in consultation with Dr. King. The gastro-intestinal symptoms had become especially prominent following the onset of the "grippe". We found him with a dilating heart, considerably cyanosed, and the "cold on the chest" we looked upon as a beginning pulmonary edema. The digestive distress we likewise regarded as secondary to the cardiac decompensation. His blood pressure measured 220 systolic with 105 diastolic. The urine showed a 2% moist albumen and many casts (Sp. Gr., 1025). A phenolsulphonephthalein test revealed poor kidney functioning (10%-12% respectively).

On March 27 a repetition of the attack of intestinal hemorrhage of three years before developed. This was most profuse in character and seemed to exhaust the patient completely. The arterial tension was markedly lowered at once. From this time to the date of his death, there was noted a gradual failure of the circulation, with rapid, irregular pulse, precordial pains and orthpnea. The stools remained dark red and tarry to the end.

Epicrisis. In reviewing the clinical aspects of this case, it reveals the type commonly grouped as cardio-renal disease. The massive intestinal hemorrhage, however, represents an interesting diversion from the usual clinical picture of this condition. It has seemed to me that these hemorrhages might best be explained by assuming for their basis an advanced arterial degeneration with an accompanying high blood tension.

This becomes all the more convincing when we consider the absence of all typical gastro-intestinal symptoms, which might denote the existence of an organic lesion within the digestive organs themselves.

The Various Etiological Factors Involved in Massive Gastro-Intestinal Hemorrhage.

Even in the earlier medical writings references may be found to the occurrence of large hemorrhages from the upper digestive tract for which no adequate cause could be assigned. The term "gastric diapedesis" was used, in many instances, as a designation for this condition,—a term which merely signifies an oozing of blood from the gastric mucosa, without, however, attempting to explain its cause.

In 1905, Hale White collected, from a group of his cases, several examples of gastric hemorrhage of obscure origin, which he classified as instances of simple "gastrostaxis". This designation again is far too indefinite in character for scientific nomenclature and should never be accepted in explanation of a gastric hemorrhage, no matter how obscure its origin might be.

An attempt should at least be made in each instance to assign some specific pathological grounds for the causation of a massive hemorrhage into the digestive tract. A brief discussion and review of some of the possible factors involved may
cidence of visible or gross hemorrhage into the digestive tract, with a discussion of the clinical cases detailed above.

1. *True Peptic Ulcer.* (Cruveilhier ulceration.) The in-
serve a useful purpose in the present instance in connection

as a result of the common or Cruveilhier type of peptic ulcer, has been estimated variously. Lepert, for example, in his series of cases, found the percentage of visible hemorrhage to be as low as 21%, while Joslyn, on the other hand, in the tabulation of his material, estimates the percentage as high as 81. Stockton's statement that in peptic ulcer macroscopic hemorrhage occurs in approximately one-third of the cases is probably the more nearly correct view. Since further light has been shed upon the more varied etiology of hemorrhage effusions into the gastro-intestinal tract, it would appear that peptic ulcer is not to be considered as frequent a factor as was formerly held. It also should be recognized that after the fourth decade, bleeding from a peptic ulceration is of more profuse character and yields a relatively higher percentage of fatality, because of the greater probability at this period of life of the presence of degenerative processes in the arterial system.

2. *Ulceration Simplex.* (Dieulafoy ulceration.) This condition was first described by Dieulafoy in 1898, and its status as a definite clinical entity has now been fully established by numerous observers. In an article presented in 1918, Moschowitz made a complete review of the entire available literature on the subject, adding four cases from his own experience that had come to operation, in each instance, with a previous diagnosis of true peptic ulcer.

The essential pathology of this type of ulceration partakes of an erosion or superficial necrosis, of the gastric mucosa. The extensive bleeding has been found to occur, however, from the rupture of a small arteriole just beneath the submucosa. A definite etiological basis for the condition has, as yet, not been determined. The clinical course is marked by a sudden vomiting of blood, usually in large volume, with the attending phenomena of pallor and shock. Only rarely do premonitory digestive symptoms occur. The prognosis is not unfavorable.

Malignant Growths. Malignant growths invading the lumen of the digestive tract rarely become the source of massive hemorrhages. Instead, there is to be expected rather a slow seepage of blood derived from capillary oozing. Nevertheless it should be remembered that the erosion of a large vessel might occur in neoplastic tissue, especially when extensive sloughing takes place.

Hepatic Cirrhosis. This is generally recognized as perhaps the most frequent cause of massive hemorrhage from the digestive tract.

According to the statistics collected by Preble in 1900, among 60 cases of fatal gastro-intestinal hemorrhage in cirrhosis of the liver, in fully 85% the location of the ruptured varix was found in the lower third of the esophagus or in the stomach. In the other 15%, the bleeding had its origin in the simultaneous rupture of numerous venous capillaries situated in the mucosa, of the stomach or upper intestine.

Probably the most important feature of Preble's studies is embodied in his statement, that "in two-thirds of the cases the diagnosis of hepatic cirrhosis either was not made at all, or only after months or years, during which time other symptoms of cirrhosis developed." This will serve to explain the occurrence of profuse hematemesis in certain cases for which no cause is immediately ascertainable.

In addition to the usual Laennec type of cirrhosis Hamburger has also reported an interesting case of profuse recurring hematemesis with fatal outcome, which autopsy demonstrated had been caused by an extensive syphilitic cirrhosis of the liver.

Splenic Anemia and Other Forms of Splenomegaly: The advent of hemorrhage into the stomach and intestinal tract in splenomegalies of whatever origin is by no means an uncommon clinical event. The most notable example of this is found in splenic anemia, or the so-called "Banti's Disease." Whether Banti's Disease, as such, should be considered a distinct clinical entity, still remains a matter of controversy. Norris, Symmers and Shapiro have insisted upon an entire elimination of the term from splenic pathology, claiming that the condition is merely a manifestation of a syphilitic involvement of the spleen and liver.

However, apart from the standpoint of etiology, the syndrome commonly known as Banti's Disease is, undoubtedly, a not infrequent cause of severe attacks of gastro-intestinal hemorrhage.

The fundamental cause of the hemorrhage cannot be definitely established in all of the cases, but it is not believed to be entirely dependent upon a concurrent hepatic cirrhosis, as some have claimed.

In an interesting case, reported by Donald C. Balfour a few years ago, recurring gastro-intestinal hemorrhages were present for which no explanation could be found even after several exploratory laparotomies had been undertaken for the purpose. In the final effort to find some method of checking the persistent hemorrhages, Balfour decided upon a removal of the spleen, which indeed brought about prompt and complete recovery in the case. The spleen, after removal, was found to be twice its normal size, and the liver, according to the records, showed "apparently moderate cirrhosis."

Toxic Hemorrhagic Gastritis: This represents a pronounced grade of inflammation involving the gastric mucosa, as a result of a direct invasion of infectious organisms of various kinds, principally the streptococcus and the pneumococcus.

The source of such infection is usually found in one of the abdominal organs, though more remote antrums of infection, such as the tonsils, the gums and the root canals of the teeth, must not be overlooked.

According to Deaver, "a knowledge of the hemorrhagic possibilities of active congestion of the gastric mucosa cannot be learned at the mortuary slab, but only by witnessing its bleeding surface on the operating table in the living."

The recognition of this condition as one of the possible causes of sudden and massive hemorrhage from the stomach is of comparatively recent date. However, its status has now been fully established and in searching for the origin of an otherwise obscure gastrorrhagia the possibility of a inflammatory, bleeding gastric mucosa should be kept in mind.

An instructive case in point has been reported by Outland and Clendening. The patient had suffered several attacks of severe gastric hemorrhage. Upon operation, the appendix was found buried in a dense mass of adhesions to which the omentum had become attached. The authors believe that the hemorrhage from the stomach, in this case, represented a seepage of blood from an infected gastric mucosa and that the infection itself had been conveyed directly from the appendix to the stomach by means of an adherent omentum.

The Blood Dyscrasias. Profuse hemorrhage might occur in the course of any severe type of anemia, as the result of the sudden rupture of a vessel wall which has been weakened by fatty degenerative changes. The gastro-intestinal tract may thus become at times the scene of more or less copious hemorrhage as a sequel to such conditions as pernicious anemia, leukemia, Addison's Disease, chronic malaria, etc. Likewise, in hemophilia and in the several forms of purpura, vascular accidents of a similar nature have been reported as occurring along the alimentary tract.

Aortic Aneurysms, with Rupture into the Digestive Tract. This is obviously among the less frequent causes of hemorrhage into the digestive tract. Among the 149 instances of ruptured visceral aneurysms, tabulated by Nixon in 1911, in only three did rupture occur directly into the gastro-intestinal tract. Since that time, four additional cases have been recorded in the literature, two of which, recently reported by Morlow, were found to have taken place directly into the duodenum.

Vicarious Menstruation. The question still remains *sub-judice* as to whether a sudden and profuse hematemesis can at any time be explained solely upon the basis of a vicarious menstruation into the free lumen of the stomach.

In conjunction with many other careful observers, Stockton takes his stand as a firm believer in the possibility of such an event. This author, in summarizing his views on the subject, clearly states his conviction that "the vomiting of blood in lieu of the catamenial discharge, is a reality."

On the other hand, Deaver holds a decidedly contrary opinion, expressing himself emphatically in these terms: "Vicarious menstruation, as a cause of hematemesis, is an absurdity of the medical imagination more fertile in hypothesis than in knowledge of living pathology."

None the less, it would seem that the undoubted occurrence of vicarious menstruation in other organs would lend weight to the view that a similar event might take place, even though rarely, into the digestive tract.

The Role of the Arterial Factor in the Etiology of Massive Gastro-Intestinal Hemorrhage. The assumption that localized disease of the gastric vessels themselves might take part in the pathogenesis of peptic ulcer was entertained by Virchow, as far back as 1853. Even prior to that time, Cruveilhier, in his earlier descriptions of the peptic ulcer lesion, had called attention to the sharply defined discrete character of the lesion which he was inclined to explain upon the basis of some interferences with the vascular supply to the diseased area. In the more recent literature, scattered references may be found pointing to the influence of localized arterial disease as one of the predisposing factors in the etiology of peptic ulcer.

In 1913, this aspect of the subject received an exhaustive and critical analysis at the hands of Orphuls, in an article entitled "The Relation of Gastric and Duodenal Ulcer to Vascular Lesions." As a result of his study, this author expressed the view that gastric and duodenal ulcers arise uniformly from interference with the vascular supply to definitely limited areas of the gastric and duodenal mucosa. Numerous instances are cited by him, largely based upon material obtained by necropsy, to prove that arterio-sclerotic processes in particular with ensuing obliteration of the gastric and duodenal vessels become the determining factors in the etiology of peptic ulcer, especially in individuals past the age of thirty. While this extreme viewpoint has not met with general acceptance, sufficient evidence is at least available to indicate that in the pathogenesis of peptic ulcer the arterio-sclerotic factor can no longer be considered a negligible one.

Stockton, for example, in reviewing the record of a case of extensive gastric ulceration, seen by him, which was found at autopsy to have been caused by an obliterating arteritis of several of the gastric vessels, frankly acknowledges the possibility that, "the very large ulcers of the stomach occasionally observed past middle life, result from the condition of arterial disease more often than is generally supposed."

In two of the cases reported above, it will be recalled that radiological examination indicated the presence of previous ulceration in the duodenum. Since both individuals likewise exhibited unmistakable evidence of arterial disease, it might be assumed that the profuse and recurring hemorrhages into the intestines, in each instance, had their source in an ulceration of arterio-sclerotic origin.

Unfortunately this could not be definitely established, in view of the lack of opportunity for direct inspection of the lesions themselves.

Apart from this assumption it is not to be denied that the associated hypertension of the arterial system in each of the three cases played a most important role in determining the occurrence of the hemorrhagic attacks. With each recurring attack, a prompt lowering of the vascular tension was noted, as was to be expected, but, within a brief period the pressure readings showed a uniformly rapid return to the heights previously attained.

Under the circumstances, it has appeared to me as if the copious effusion of blood, in those cases, served in a measure as a safety valve in blood-letting, relieving, in this manner, excessively high tension from the entire arterial system. We might even consider an apoplexy of this type within the free lumen of the digestive tract, as a life saving effort, sparing the more serious consequences which would await a vascular accident of similar nature in more vital organs.

Finally, it should not be overlooked that simple arterial rupture is possible along the gastro-intestinal tract, without previous ulceration, simulating a pathological picture not infrequently presented in other organs; notably, in the brain. Under the strain of an increased vascular tension, a vessel wall, previously weakened by degenerative changes, might rupture outright with an outpouring of blood, into the digestive tract.

DISCUSSION.

Dr. E. L. King: Dr. Simon's third case interested me exceedingly, as I treated this gentleman in his first attack. At this time the bleeding was entirely intestinal. This fact together with a history of "indigestion" and hearty eating as well as the X-ray findings of a filling defect in the duodenal cap pointed to the diagnosis of duodenal ulcer. This was also the diagnosis of one of our leading internists, a professor in the department of medicine of Tulane, who saw him in consultation. The subsequent course proved it to be without doubt a case of intestinal hemorrhage due to arterial disease.

Some years since Dr. Miller removed the uterus from a colored woman at the Charity Hospital, her complaint being hematemesis. She had been vomiting blood at times for years. A gastro-enterostomy had been done, under the diagnosis of gastric ulcer, without relief. She has been under our observation ever since the hysterectomy, and has had no further trouble. I believe this was a case of vicarious menstruation, as mentiond by Dr. Simon. I would be glad to show him the patient some day.

Dr. D. N. Silverman: It is well to call attention to the fact that the many complications of arterial disease, including hemorrhage into the upper digestive tract, should be thought of in young adults below the age of thirty years, as well as in those of middle and later life. This statement results from personal experience in autopsy work upon young soldiers between the ages of 25 and 30 years. Many of these men dying of acute infectious diseases such as influenza, meningitis, typhoid and paratyphoid fever, manifested moderate and severe grades of aortitis which went unrecognized clinically. In a few cases with gastric ulcer, the same vascular pictures with advanced arteritis were demonstrated. These observations in 1918 and 1919 are well substantiated in the recent work of Warthin. This author, in a histopathological study of seven-hundred (700) cases, concluded that 40% of the latter showed some syphilic infiltration.

Dr. J. A. Storck. Some years ago during my connection with the Eye, Ear, Nose and Throat Hospital, I recall a case with varices of the lingual body in which a copious hemorrhage occurred. Another case of more recent date came under my observation. A farmer, aged 56, who had frequently complained of gastric distress had a copious hemorrhage. A diagnosis of gastric ulcer was made by his attending physician. I was called to see the patient, who presented well-marked evidence of arterio-sclerosis. A surgeon consulted, advised operation. I stated my objections to any surgery, but the patient was operated, and a short time afterwards he succumbed.

I think Dr. Simon is justifiable in assuming that arterio-sclerosis was the cause of the hemorrhages occurring in his cases.

PRELIMINARY REPORT ON TREATMENT OF GRANULOMA INGUINALE WITH EXHIBIT OF CASES.*

By W. A. REED, M. D., and MONROE WOLF, M. D., NEW ORLEANS.

Before going into the case histories of the patients whom we are exhibiting tonight, it is only proper that a few words be said regarding the history, etiology, clinical characteristics and results of the previous forms of treatment in granuloma inguinale.

Macleod(1) in India in 1882 was the first to note and describe the disease, and at the time called it "serpiginous ulceration of the genitals." The next publication appeared in 1896 by Conyers and Daniels(2) who classified it as a form of lupus. The following year (1897) a very complete article was written by Galloway(3) describing the first recognized case occurring in England, in which he gave an accurate description of the symptoms as well as the treatment of the case, and which he classified as a form of "yaws" because of the histological similarity of the lesions in both diseases. LeDantic(4) in 1900, and Jeanselme(5) in 1904 considered it tubercular in nature. In 1905 Donovan(6) discovered the bodies that have since been almost constantly found in the lesions of granuloma inguinale, and classified it as belonging to the protozoan group of diseases. Wise(7), Maitland(8), Bosanquet(9) and MacLennon(10) in 1906 found spirilla in the lesions which they, with the exception of

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Bosanquet, thought were the spirocheta pallida, and accordingly decided that granuloma inguinale was syphilitic in nature. Bosanquet, however, considered the newly found organism to be the spirocheta refringens. In 1906 Poch(11) described the first recognized case occurring in the United States. In 1909 Cleland(12) also reported finding a spirillum in the lesions of two cases and gave it the name of "spirocheta aboriginalis" because of the occurrence of the disease among the aborigines of West Australia. In 1907 Sibert(13) found an incapsulated diplococcus in lesions of granuloma inguinale similar to the bodies described by Donovan. In 1911 Flu(14) ascribed the disease to a form of chlamydozoa. In 1913 Martin(15) found an incapsulated diplococcus not unlike the Donovan bodies which he was able to grow in culture. During the same year Araogoa and Vianna(16) discovered that tartar emetic which had given such wonderful results in the treatment of trypanosomiasis was equally efficient in the treatment of granuloma inguinale, and obtained complete cures in a number of cases. However, they considered the causal agent to be a new genus of schizomycete to which they gave the name "kalymmato bacterium granulomatis." Later on (1917) Araogoa(17) recovered from the lesions a capsule bearing bacterium not unlike the bacillus mucosus capsulatus of Friedlander of which he was able to grow cultures. Animals innoculated with an emulsion of these organisms died from a severe septicemia within twenty-four hours. In 1918 Walker(18) grew cultures of these same incapsulated bacilli, which he classified as belonging to the Friedlander group. There have been a great number of articles written on granuloma inguinale in recent years and while the majority of the authors have been able to demonstrate in the lesions the bodies described by Donovan, yet they are not in accord as to whether the apparently causal organism belongs to the protozoan or bacterium group.

The geographical distribution of granuloma inguinale was always considered to be tropical or semitropical until 1906 when Poch reported the first recognized case occurring in the United States. There is no doubt in our minds that this disease has been endemic in the United States and especially in the Southern States, for a great number of years without recognition upon the part of the medical profession, being diagnosed as serpiginous chancroids in practically every instance. In fact in our own clinical experiences at Touro Infirmary and Charity Hospital we have made such diagnosis in cases that we now realize were typical cases of granuloma inguinale.

Until the appearance of the work of Araogoa and Vianna in 1913, the only known treatment for granuloma inguinale was curettage, cauterization, the X-ray, local antiseptic applications and antiluetic treatment. With a few exceptions literature as well as our own experience has shown that cures from such treatment have been practically nil. In spite of the wonderful results obtained by Araogoa and Vianna as long ago as 1913 the old form of treatment has continued to be the one in vogue here in the United States until almost the present time.

The clinical characteristics of granuloma inguinale are nearly always the same. The disease occurs practically only in the colored race. There are only a few cases reported in the literature where it has occurred among the whites. Both males and females are subject to it, with perhaps a slight preponderance of females. It begins with one or more small very slightly indurated papules which soon break down leaving a red granulated area with a slightly elevated surface and edges and very little induration. The surface exudes a glairy bloody fluid and here and there may develop crusts. The lesions are not painful except on pressure but bleed very easily. Spreading occurs along the margins and on opposing surfaces. Involvement of the glands practically never occurs, altho some cases may show pseudo-elephantoid involvement of the scrotum or labia due to obstruction of the lymphatics from fibrous tissue deposit. The usual location of the lesions are on the genitalia, thighs, perineal, perianal and inguinal regions, altho it may manifest itself on the face, neck and even within the mouth as demonstrated in one of the cases shown tonight. The disease is always of a chronic nature, its duration ranging from one and a half to fifteen years in our cases.

All of the cases shown have had the old classical form of treatment with no benefit whatever. Repeated blood Wassermann examinations have been negative and on some of them scrapings for the spirocheta pallida have been done with negative results. It was only on instituting the tartar emetic treatment that we began seeing results in our cases. Altho tartar emetic may be and has been given by mouth as well as by inunction and intramuscular injection (Castellani(19)) we have chosen the intravenous route as being the simplest. Solutions of antimony and potassium tartrate are prepared with freshly distilled sterile water in one per cent strengths and intravenous injections are given at intervals of three to seven days, starting with an initial dose of two centimeters (cubic) and increasing the amount 2 c. c. each time until therapeutic results are obtained. At the present time some of these cases are receiving as much as 14 c. c. at an injection. A few slight and transient reactions have been observed. A sudden paroxysm of coughing occurred in one case immediately after having received the injection and in another we observed diarrhea and vomiting. These two reactions occurred on arriving at a dose of 8 and 10 c. c. respectively.

We have been able to demonstrate the Donovan bodies in three of these cases and at the present time are endeavoring to grow cultures of the organism with a view of innoculating experimental animals if possible.

In concluding this preliminary report we wish to express our thanks to Dr. A. Nelken in whose service at Touro Infirmary the majority of the cases have been studied and treated. We also wish to express our appreciation for the interest and assistance of Dr. I. M. Gage who found the Donovan bodies in one of our first cases, as well as to Drs. Lanford, Johns, D'Aunoy, Davidson, Carter and P. Gelpi, to the latter of whom we are indebted for the privilege of showing tonight a case from his service at Charity Hospital.

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*NOTE—References indicated by a star are taken from an article by Dr. E. L. Walker, Journal of Medical Research, Vol. 37, Sept., 1917, to Jan., 1918.

Case No. 1. Mrs. J. T., born and raised in Louisiana, aged 27 years. No children. Colored. Lesions appeared in March, 1919. three months following a laparotomy. No exposure for 4 months previously. Lesion started as a small "pimple, which contained water" in one labium of the vagina, which ruptured after three or four days leaving an ulcerated area which spread rapidly. After four months she consulted a physician. At this time the lesion involved both vaginal walls and the thighs, and there was great suffering from wine coming in contact with open lesions. Considerable odor and discharge was present also. She was treated with local applications until she appeared at Touro Infirmary, November 5th, 1920. At this time, the lesion appeared as shown in the photograph. Blood Wassermann was negative. Smears examined for Donovan bodies by Doctor Lanford were reported as negative. Treatment with X-ray, bichlorid of mercury packs and douches, dichloramine T, silver nitrate applications and mixed treatment were tried until March, 1921, with no benefit whatever. Then tartar emetic injections were begun and continued as follows, complete cure being attained:

April 2/21, Tartar Emetic, 3 c. c.—Improvement in burning, discharge and spreading checked.

April 6/21, Tartar Emetic, 5 c. c.

April 9/21, Tartar Emetic, 6 c. c.—Slight dizziness.

April 12/21, Tartar Emetic, 8 c. c.—Marked improvement, slight nausea, no vomiting.

April 16/21, Tartar Emetic, 8 c.c.—Hacking cough lasting for 5 minutes, dizziness.

April 19/21, Tartar Emetic, 9 c. c.—Lesions completely healed, coughing occurred after injection.

April 23/21, Tartar Emetic, 9 c. c.—Slight reaction coughing, lesions still appear completely healed.

Case No. 2. Mrs. H. F., born in Louisiana, aged 26 years, 1 child, Colored. Referred from gynecological clinic on June 28, 1920, for sore on Vulva and in left inguinal region of 1 year and 5 months duration. Wassermann—strongly positive. Three injections of salvarsan were given: on July 6, 1920, July 20, 1920, Sept. 14, 1920, with mixed treatment between injections. Numerous applications of X-ray were given in the meantime. On October 22 and October 29 two more injections of salvarsan were given. At this time the general condition had improved but no change had occurred in the lesions. December 16, 1920, Wassermann, negative. In January, 1921, three more injections of salvarsan were given. On March 7, 1920, the lesions were unchanged. Tartar emetic was then begun:

Donovan bodies looked for and none found in slides stained by Gram method; later found them when stained with Wright's stain:

March 9/21, Tartar Emetic, 2 c. c.—No reaction.

March 14/21, Tartar Emetic, 4 c. c.—Lesions look dryer.

March 21/21, Tartar Emetic, 6 c. c.—Lesions look dryer and healing; feels better, slightly dizzy and nauseated.

March 28/21, Tartar Emetic, 6 c. c.—Lesions still healing, no reaction.

April 4/21, Tartar Emetic, 8 c. c.—Feels very good, lesions still improving.

April 18/21, Tartar Emetic, 10 c. c.—Lesions healing beautifully, in fact practically entirely healed.

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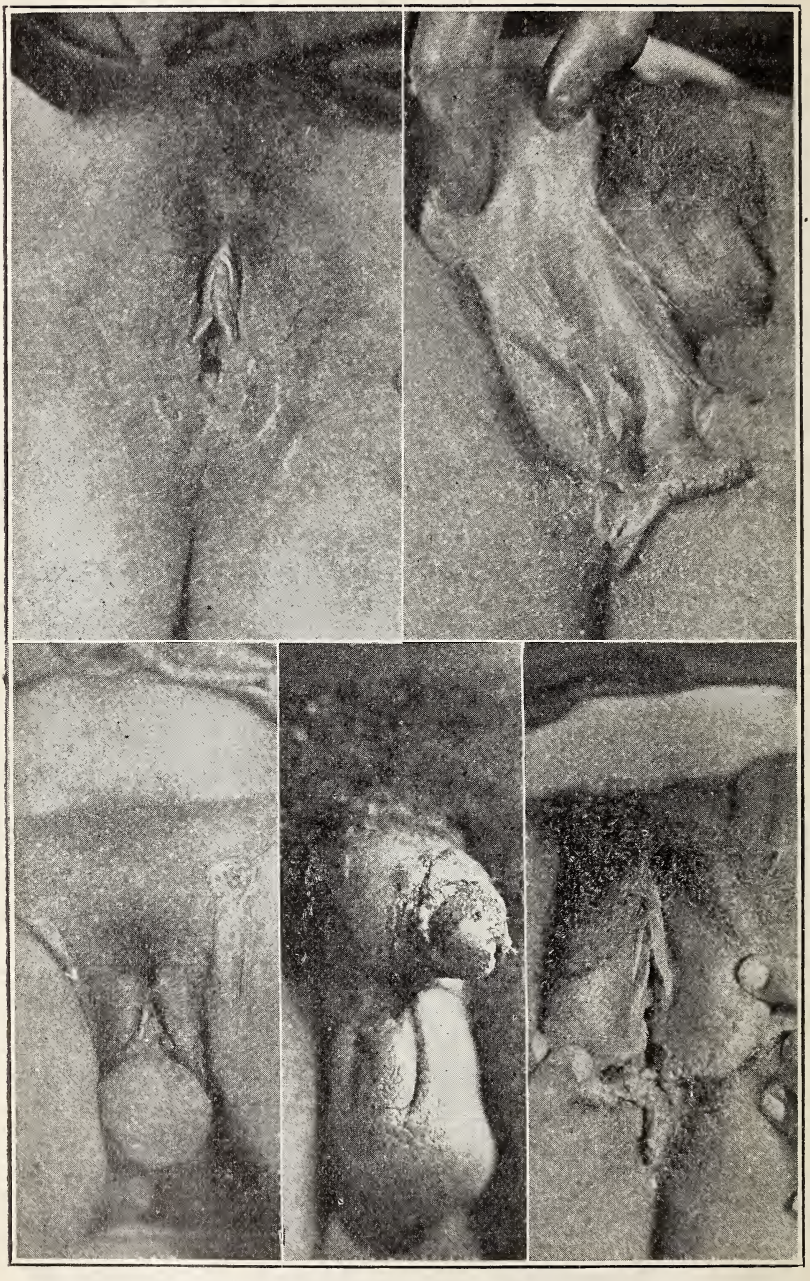

UPPER LEFT—Case 1, before treatment with tartar emetic; complete cure resulted. UPPER RIGHT—Case 3, showing lesions on labia extending into per- resulted. UPPER RIGHT—Case 2, showing lesions on labia extending into perineum. Mass on right labium is a fibroma; lesions now practically healed. LOWER LEFT—Case 3, showing lesions in left inguinal region; completely cured. LOWER CENTER—Case 4, lesions on glans penis, shaft and scrotum; almost well at present. LOWER RIGHT—Case 5, lesions on floor of vagina and labia; treatment recently started.

Case 3. Mrs. S. K., born in Louisiana, aged 25, no children, colored. Referred from Gynecological Clinic February 24, 1921, with a diagnosis of possible lues. At this time she complained of sores in the privates which had been present for 10 months. Examination showed an elevated granular ulceration involving both labia minora, lateral walls of the vaginal orifice and extending down onto the skin of the perineum. There was also a similar lesion in the left inguinal region which she said had been present for almost 3 years, and which started as a "kernal" which she painted with iodine. It very soon broke down with considerable bleeding leaving an ulceration which has failed to heal up to the present time. According to the patient the lesion in the vagina began as a "bump" on the vaginal floor which she scratched because of the associated itching, producing an ulceration which at the end of the month had reached the size of a quarter. She then consulted a physician who prescribed local treatment and mercury rubs with no improvement in the lesions whatever, the lesions continuing to spread.

While at the Isolation Hospital in 1919, she was given three "shots" in the arm. On admission to the Clinic (February 24, 1921) the Wassermann reaction was negative. Dichloramine T was first used without results. Then Tartar Emetic was begun, the following injections having been given:

March 15/21, Tartar Emetic, 3 c. c.—Dizziness.

March 19/21, Tartar Emetic, 3 c. c.—Dizziness, vomiting and loose bowels, lesions better, no reaction.

March 24/21, Tartar Emetic, 3 c. c.—Donovan bodies looked for but none found.

March 28/21, Tartar Emetic, 6 c. c.—No reaction, groin lesion healing.

March 31/21, Tartar Emetic, 7 c. c.—Improving, no reaction.

April 2/21, Tartar Emetic, 8 c. c.—Improving, no reaction.

April 5/21, Tartar Emetic, 10 c. c.—Vomiting, headaches, no diarrhea.

April 7/21, Tartar Emetic, 10 c. c.—Groin lesion healed, habitual epistaxis with which she had been suffering has stopped.

April 9/21, Tartar Emetic, 10 c. c.—Vomiting and diarrhea.

Report from E. N. & T. department at this time:—small ulcerated area on right side of naval septum. Smaller but similar lesion on left side probably not Luetic.

April 12/21, Tartar Emetic, 10 c. c.—Vomiting and diarrhea, pains in shoulder.

April 16/21, Tartar Emetic, 8 c. c.—Vomited, loose bowels.

April 19/21, Tartar Emetic, 10 c. c.—Vomited and diarrhea, slight cough, general pains, lesions in vagina practically healed.

April 23/21, Tartar Emetic, 6 c. c.

NOTE—Smears and scrapings were examined by Dr. Lanford for the spirocheta pallida and Donovan bodies with negative results.

Case 4. W. M., born in Mississippi, aged 29, colored. Sore appeared on glans penis in October, 1916, while working as Pullman porter in Mexico. Exposed 1 week previously. About 7 days after sore started, began having fever, (no chills), which lasted 3 weeks. Bubo developed about 8 days after appearance of sore which was opened and great deal pus liberated, healing in about 1 month. By this time sore had involved whole of glans penis. Then circumsized at Charity Hospital. Almost healed after this, but 2 weeks later started with little "pimple" and whole thing broke down again. Used all sorts of treatment, including one dose salvarsan while in Camp Beauregard in August, 1918, with no benefit. First appeared at Touro in January, 1919. Left and went to Charity Hopital. Given medicine by mouth and various salves. Reappeared at Touro on March 16, 1920. X-ray was applied many times. Then cauterized with actual cautery at Charity Hospital in April 13, 1920. Two Wassermann, both negative, Two doses salvarsan, each 0.5 given in July, 1920, with no improvement. Mixed treatment and local applications as well as large doses of iodides were then used.

On December, 1920, Dr. I. M. Gage removed whole of involved area and skin grafting was done. This caused no improvement whatever. Donovan bodies were found by Dr. Gage at this time. Tartar Emetic was started on March 16, 1921.

March 16/21, Tartar Emetic, 3 c. c.—No reaction.

March 19/21, Tartar Emetic, 4 c. c.—No reaction.

March 25/21, Tartar Emetic, 6 c. c.—No reaction.

March 30/21, Tartar Emetic, 8 c. c.—No reaction.

April 4/21, Tartar Emetic, 10 c. c.—No reaction.

April 11/21, Tartar Emetic, 12 c. c.—No reaction.

April 18/21, Tartar Emetic, 15 c. c.—Dizziness, vomiting and diarrhea followed.

April 25/21, Tartar Emetic, 10 c. c.—No reaction.

Lesions healing nicely, in fact all healed except two small areas near the meatus of the urethra.

Case 5. Mrs. J. H., born in Louisiana, never out of U. S. A., 21 years old, no children, colored. Sore developed over 1 year ago. Has been treated by three doctors before coming to Touro Clinic. Sore gradually increased in size until present time. Wassermann, September 25/20, negative. Silver nitrate used. Also douches of bichloride. Took 2 "shots" salvarsan in Texas 9 months ago. No benefit whatever. At present time sore involving floor of vaginal orifice; both labia show some hypertrophy and covered with elevated papules and a few small ulcerations. Right inguinal gland operated when a child; indurated scar remains. Left inguinal gland normal, until 2 weeks ago; now swollen; probably secondary infection. Scraped April 20/21, Donovan bodies found. Sections (Dr. Lanford): Infectious granuloma, acute and chronic inflammatory reaction.

April 22/21, Tartar Emetic, 3 c. c.—No reaction.

April 25/21, Tartar Emetic, 6 c. c.—No reaction.

Not under treatment long enough to see clinical change in the lesions, but patient says she feels much better.

DISCUSSION.

Dr. I. M. Gage: I have been very much interested in Granuloma Inguinale for some time, and had the pleasure of studying one of the cases presented by Drs. Reed and Wolf here tonight. This patient was referred to the surgical clinic from the G. U. Clinic of Touro Infirmary on August 24th, 1920. I made a clinical diagnosis of Granuloma Inguinale and was able to verify my diagnosis the next day, by finding the typical Donovan bodies in the large endothelial leucocytes. The smears were taken from the most active part of the ulcer.

The patient had a typical ulceration, annular in type, surrounding the penis just behind the corona, and extending on to the glans penis. The patient developed a sore one month after coitus, which gradually encircled penis as above indicated, and remained localized on the penis. He was treated for five years, by the following procedures: circumcision, cauterization, salves, antisyphilitic treatment, and finally was given nine X-ray exposures without any relief or diminution in size of the ulceration.

I tried in August to obtain some tartar emetic, but was unable to procure any at that time after several attempts. The patient was very anxious to have something done for him, and about this time I came across an article by an English surgeon in India recommending surgical removal. I tried it on this patient in October, 1920, and he remained free from the disease for a month after which time he had a recurrence, whch rapidly assumed the former proportions. I did not skin graft this patient as stated by Dr. Wolf, as it would be an unsound surgical procedure to skin graft an ulcerated area of the Granuloma Inguinale type.

Dr. Reed succeeded in obtaining some tartar emetic and the patient was referred back to him for treatment, and I am gratified by the results obtained by him in relieving (practically curing) this unfortunate who had suffered for almost five years.

The organisms causing the disease are found in the most active part of the lesion, namely, at the advancing edge situated deeply in the tissue, and are best obtained by taking out a section under local anesthesia, trimming all the granulations away and squeezing the piece of tissue. In this way, you get almost a pure slide of Donovan bodies, the same procedure should be carried out in obtaining material for cultures, except the tissue should be washed in saline.

I have identified within the endothelial leucocyte the following types of organism. (1) Zooglear masses, (2) dumb-bell shaped encapsulated bacilli, (3) encapsulated bacilli, (4) encapsulated bipolar or diplo-bacilli bodies, (5) non-encapsulated bacilli or only showing the capsule very faintly, in vacuole spaces in the cytoplasm of the endothelial leucocyte.

I have found large masses of coccoid like bodies staining red in the endothelial leucocyte, which gave me trouble at first, but finally I was able to identify them as the granules of eosinophiles. I have found the endothelial leucocytes engorged with neutrophiles, red blood cells, small mononuclears, basophiles, and eosinophiles, also other types of bacteria in various stages of digestion. The cytolytic granules are the last part of the cells to be digested, and the nucleus of the small mononuclear seems to be the last part of the cell of that series to be phagocytised; all of the above are very confusing and should be studied thoroughly, before drawing any conclusions.

The Donovan bodies take a beautiful stain with Wright's. The organism takes a dark blue stain, while the capsule takes a light blue stain, and cannot be confused with the other types of bacteria encountered in the smears. You find anywhere from four to five organisms up to 25-30, and in some instances the endothelial cells are engorged to bursting capacity with them. The organisms are also found extra cellular, scattered throughout the smear, but I have been unable to find them in the neutrophiles of the phagocytic series. I do not think a definite diagnosis of Granuloma Inguinale should be made without finding the encapsulated organisms within the endothelial leucocyte in smears taken from the lesion.

The disease is a definite clinical entity, transmitted by sexual intercourse, incubation period not definitely known, producing a chronic sclerosing ulceration of serpiginous type, occurring on the penis, vagina and the groins. There may be auto-innoculation in various parts of the body.

The etiology is the bodies described by Donovan, and conforming morphologically and culturally with the group of encapsulated bacilli.

Dr. A. Mattes: We are here dealing with an infection, supposedly due to a coccus or a bacillus. The fact that a member of the bacterial group is named as the causative agent in granuloma inguinale in spite of the effect of the administration of tartar emetic is quite surprisng.

We know that tartar emetic has been of value in certain diseases of protozoal origin, i. e., trypanosomiasis as well as certain tropical lesions due to members of the group of spirochetoridea. I cannot conceive of the same agent being specific for a coccus or a bacillus, no matter of what nature. To my mind, Granuloma Inguinale is not a bacterial disease, but is due primarily to a protozoon or a member of the group of spirochetoidea.

It is safe to assume this in spite of the evidence submitted. Were antimony of value as a bactericide, its value would have been recognized years ago and its use as such well established. Here for the first time in the history of medicine, we have a salt advanced as the curative agent in a disease of supposedly bacterial origin. Experiments date back to the ages in the use of salts or combinations for the treatment and prevention of disease due to pyogenic and pathogenic organisms.

No salt has ever been of great value in the treatment of any disease due to a bacillus or a coccus. All salts or combinations of such that have been of any value have been so only in protozoal diseases and diseases due to members of the spirochetoidea group. Inasmuch as antimony is of value in the treatment of the disease caused by members of this group, time will prove that its value in granuloma inguinale depends on its effect on a member of this group and not a coccus or a bacillis found in a fair percentage of such cases.

Were this otherwise, the literature would by now be full of praises of drugs in the treatment of infections. Cocci and bacilli have never been successfully attacked by the administration of drugs. Were it so in this case, the time would now be at hand for the complete revolutionizing of the practice of medicine, for bacterial diseases would be conquered by the direct administration of salts.

As to tartar emetic, I would caution the profession as to its intravenous use. While such medication is of value, of great value, the danger of administering a direct toxic agent and the fact that it has a cumulative action should be borne in mind.

Granuloma Inguinale is a local disease not a constitutional one. Therefore, local treatment of an agent that can be and is absorbed by the area involved while not so rapid in its effect as intravenous medication, is safer, sounder and more nearly approaches the ideal. It may take a little longer, but there is no attached danger, no organ is damaged and no patient is even temporarily disabled. It should be used in all cases, reserving intravenous medication for obstinate cases or where rapid results are essential.

Other factors should be borne in mind in the treatment of granuloma inguinale. Granuloma Inguinale is usually, if not always, secondary to an initial syphilitic, chancroidal, or other ulceration. Therefore, antisyphilitic treatment should be stressed as of equal importance in the treatment of a fair percentage of these cases. Where chancroidal or otherwise, appropriate local measures should be instituted as curretage, cauterization and at times plastic procedures.

A case I have in mind involved the shaft of the penis, circumscribed the base of the penis, involved the scrotum, right inguinal region, right groin and as far back as the tuberosity of the ischium. The duration was eight years; repeated cauterization and some anti-syphilitic treatment were of no avail. X-ray exposures had no effect. This case ran the gamut of eight physicians, was given up as hopeless and told by one that suicide should be welcomed. He could not sit down, walked with great effort and with a stoop. Vigorous antisyphilitic treatment coupled with one per cent tartar emetic in normal saline as compresses to the region involved brought about the desired result. After three weeks treatment, the lesions practically disappeared. For its persistence in a small area in the inguinal region two doses of the solution were given intravenously, five and seven cubic centimeters seventy-two hours apart.

The patient at this writing is hale and hearty, has no discomfort and is apparently normal.

Dr. F. M. Johns: I have had the pleasure of studying most of the material from Drs. Reed and Wolf's series of cases, and while the evidence is not conclusive that this bacterium is the etiologic factor involved in the production of Granuloma Inguinale the uniform occurrence of these bacteria like bodies deep down in the involved tissue seems to be more than an accidental occurrence.

The important bearing of this work as a whole would strike me in the apparent cure of a bacterial disease by a synthetic drug administered intravenously. This has no parallel in medical therapy to my knowledge, and if borne out by subsequent study will open a vast field to possible results from direct "bacterial" chemotherapy.

ABSTRACT OF ADDRESS ON THE MORTALITY FROM CANCER IN THE SOUTH.*

BY FREDERICK L. HOFFMAN, LL. D.,

Third Vice President and Statistician, the Prudential Insurance Company of America, Newark, N. J.

Following a brief outline of a statement regarding the plans and purposes of the American Society for the Control of Cancer and the recent changes in the cancer death rate of the Registration Area, indicating an arrest of the progressive increase in the disease observed up to 1917 or 1918, when the educational work of the Society became effective, Dr. Hoffman said, in part:

"The present discussion covers a wide range of cancer questions hardly susceptible of being reduced to precise conclusions. The discussion is intended to stimulate further consideration of phases of the Cancer problem which seem at the present time to receive inadequate attention. The literature of cancer is so vast, even during the course of a single year, that no one could hope to do justice to the numerous new contributions made to cancer knowledge, often involving many years of pains taking research. The practical cessation of international scientific intercourse during the war has also made it difficult to keep in touch with what has been done in foreign countries, particularly the late German Empire, since 1914. As an illustration of the value of investigations hardly known in this country, mention may be made of the epidemiological cancer research by Dr. Hillenberg, of Zeitz, published in 1916 by the Medical Section of the German Ministry of the Interior. The great work by Wolfe in three volumes, of which the last was issued in 1914, also has hardly become known in America. The same conclusion applies to a small but important treatise on ''The Exact Diagnosis of Latent Cancer'', by Dr. O. C. Gruner, of Leeds, England, published by H. K. Lewis & Co., Ltd., London, and P. Blakiston's Son & Co., Philadelphia, 1919. This work, which is an inquiry into the true significance of the morphological changes in the blood, bears a close relation to the, as yet, unpublished work of Dr. Georgine Luden, of the Mayo Clinic, submitted as a thesis for the degree of Doctor of Medicine to the Medical Department of the University of Minnesota.

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*Read before the Orleans Parish Medical Society, May 9th, 1921.

Without attempting a final summary of present investigations, I would say as follows:

1. In a general way no evidence has been forthcoming that the somewhat lesser frequency of cancer among the white population of the South is the result of *climatological conditions,* as might be suggested by the observed influence of sunlight in certain forms of skin cancers in tropical countries.

2. Contrasting the cancer mortality of Northern and Southern cities, it is shown for the period 1915-1919 that the cancer death rate of *Northern cities was* 94 per 100,000 against 91 for the white population of *Southern cities,* and 68 per 100,000 for the colored population of the same cities.

3. Cancer in the South shows practically the same pronounced *tendency toward an increase,* the rate for 1915-1919 having been 91 per 100,000 against 84 during 1910-1914. A lesser rate of increase is to be observed in the case of the colored population, which during 1915-1919 had a rate of 67.7 per 100,000 against 64.0 during 1910-1914. These rates are for twenty-five representative cities, including practically all important centers of population.

4. For the *State of Mississippi* some unusually interesting cancer morbidity rates are available, likewise indicating a lesser frequency of cancer occurrence in the negro population, although the differences are not as pronounced as would be ex-

pected. The monthly incidence of the cancer reports shows a decrease during the last three years, compared with the previous four years or since the registration commenced in 1914. While the cancer death rates for the State as a whole are much below the average for the South, having been only 39.8 per 100,000 for the white population and 29.4 for the colored population during 1914-1919, the combined cancer death rates for particular cities of Mississippi are distinctively excessive, or respectively, 77.9 for Hattiesburg, 128.1 for Jackson, 87.6 for Meridian, 117.7 for Natchez, and 119.3 for Vicksburg. These rates, of course, are affected by hospital admissions, and probably unduly so on account of the largely rural character of the State.

5. On the basis of a conservative estimate the statement is advanced that the approximate number of *deaths from cancer in the Southern States* during 1920 was 13,600 for the white population and 4,500 for the colored population. It may be conservatively assumed that one-fifth of this amount of mortality can be prevented by known methods of surgical and other timely interference, provided a qualified diagnosis is made at the earliest possible moment and proper treatment is made use of as soon as the existence of the disease is recognized. This would emphasize the importance of a state-wide campaign for cancer control throughout the South, and in a broader sense on account of the larger relative frequency of benign tumors among women of the negro race.

6. The *influence of race* in tumor formation constitutes the major portion of the discussion, which has been largely concentrated upon the extraordinary frequency of uterine fibroids and uterine cancers among negro women. The conclusions are based chiefly upon the ten years' statistics, ending with 1919, of the New Orleans Charity Hospital.

7. In the New Orleans experience the white hospital admission rate on account of *malignant tumors* was 296 per 100,000 patients, while for the colored the rate was 247; but for *benign tumors* the white admission rate was 133 per 10,000 patients, against 455 for the colored.

8. All forms of malignant disease are relatively more common among the white patients except *cancers of the female generative organs and of the breast.* Among the former there was

an admission rate of white patients of 58 per 10,000, against 88 for the colored. For cancer of the breast the admission rate was 21 per 10,000 patients for the white population, against 37 for the colored population.

9. In marked contrast to the former is the very much higher liability of the white population to cancers of the *buccal cavity, stomach and liver,* and particularly the *skin.* For the last named group of malignant affections the admission rate for the white patients was 42 against only 7 for the colored. This result would seem to support the theories of Watkins Pitchfort and C. Norman Paul, according to which tropical sunlight—and possible semi-tropical sunlight—reacts injuriously to the extent of causing malignant skin affections in warm countries.

10. *Benign tumors* are of practically equal frequency as regards the buccal cavity, stomach and liver, peritoneum, intestines and rectum, but this form of tumor growth is a decidedly more common form among negroes in the case of benign tumors of the female generative organs, the respective rates having been 68 for the white patients, against 365 for the colored. Benign tumors of the breast prevailed at the rate of 4 per 10,000 patients among the whites, against 7 for the colored; but benign tumors of the skin, which caused a rate of 16 per 10,000 among the white patients, prevailed at the rate of only 9 for the colored.

11. When the different types of malignant tumors are considered it is shown that the *carcimona* admission rate was 209 for the white patients, against 198 for the colored; the *epithelioma* admission rate was 49 for the white patients and only 10 for the colored; while the *sarcoma* admission rate was practically the same for both races, or 38 per 10,000 for the white patients and 39 for the colored.

12. The *different forms of benign tumors* hardly admit of being reduced to a broad generalization in their racial aspects, but selecting the more important types it is shown that the admission rate for *adenomas* was 4.6 per 10,000 white patients and 6.6 for the colored; *angiomas,* 3.6 for the white patients and 1.3 for the colored; *chondromas,* 2.3 for the white patients and 4.9 for the colored; *cystomas,* 31.5 for the white patients and 28.4 for the colored; *fibromas,* 36.3 for the white patients and 279.3 for the colored; *gliomas,* 5.9 for the white patients and

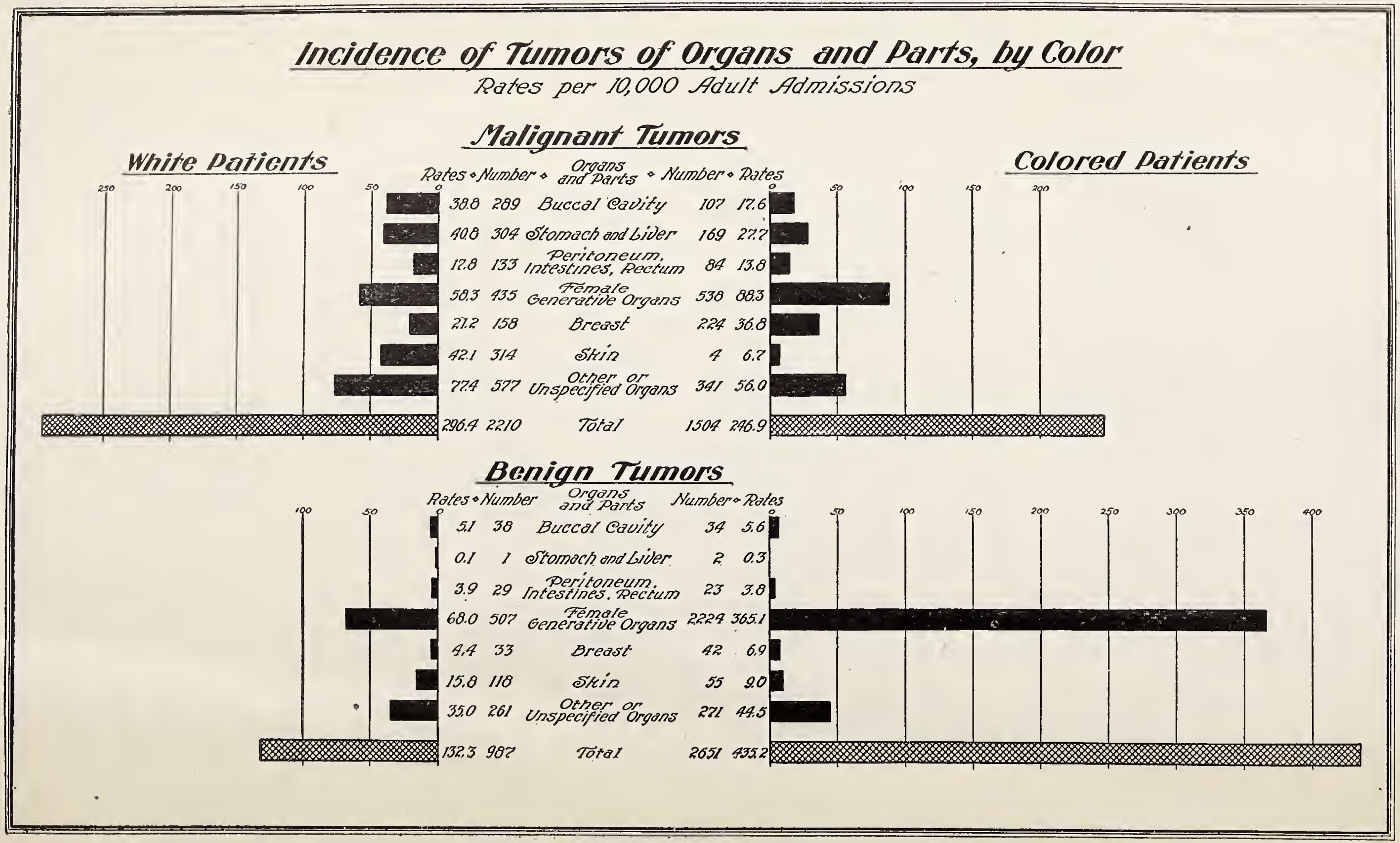
5.4 for the colored; *lipomas,* 8.2 for the white patients and 19.2 for the colored; *lymphomas,* 0.1 for the white patients and 0.5 for the colored; *myomas,* 7.2 for the white patients and 57.8 for the colored; *myxomas,* 6.6 for the white patients and 3.1 for the colored; *neuromas,* 0.1 for the white patients and 0.3 for the colored; *odontomas,* 0.0 for the white patients and 0.3 for the colored; *osteomas,* 0.3 for the white patients and 0.7 for the colored; *papillomas,* 13.1 for the white patients and 18.7 for the colored; *retention cysts,* 7.9 for the white patients and 3.4 for the colored; and *teratomas,* 4.6 for the white patients and 5.3 for the colored.

13. With particular reference to benign and malignant *tumors of the generative organs,* the investigation shows that the frequency rate for cancer of the *uterus* was 145 per 10,000 of white adult patients, against 180 for the colored adult patients; cancer of the *ovaries,* 8 for the white adult patients, against 7 for the colored; all cancers of the female generative organs, 156 for the white adult patients and 194 for the colored. Benign tumors of the female generative organs prevailed to the extent of 181.7 per 10,000 white *adult* patients, against 803.4 for colored adult patients.

14. Cancers of the *male generative organs* prevailed at the rate of 16 per 10,000 white adult patients, and 23 for the colored adult patients. These statistics are probably the first ever presented in detail in this country with due regard to race. Considering the *male ORGAN* separately, or excluding the prostate, scrotum and testicles, the admission rate for this group was 7 per 10,000 white adult patients, against 15 for the colored; but for benign tumors of this organ it was only 4.5 for the white adult patients and 4.2 for the colored adult patients; or for all male generative organs combined the rate per 10,000 patients for the white population was 5.3 and for the colored 6.1.

15. The *fatality rate* from malignant tumors in the experience of the New Orleans Charity Hospital was 21 per cent. for white patients and 19 per cent. for the colored; for benign tumors it was 5.5 for the white patients and 6.1 for the colored. Considering separately cancers of the female generative organs, the fatality rate was 14.3 per cent. for white patients and 11.3 per cent. for the colored; for benign tumors of the female generative organs it was 6.1 for the white patients, against 6.4

Benign and Malignant Tumors
New Orleans Charity Hospital, 1910-1919



Incidence of Tumors of Organs and Parts, by Color
Rates per 10,000 Adult Admissions

Malignant Tumors

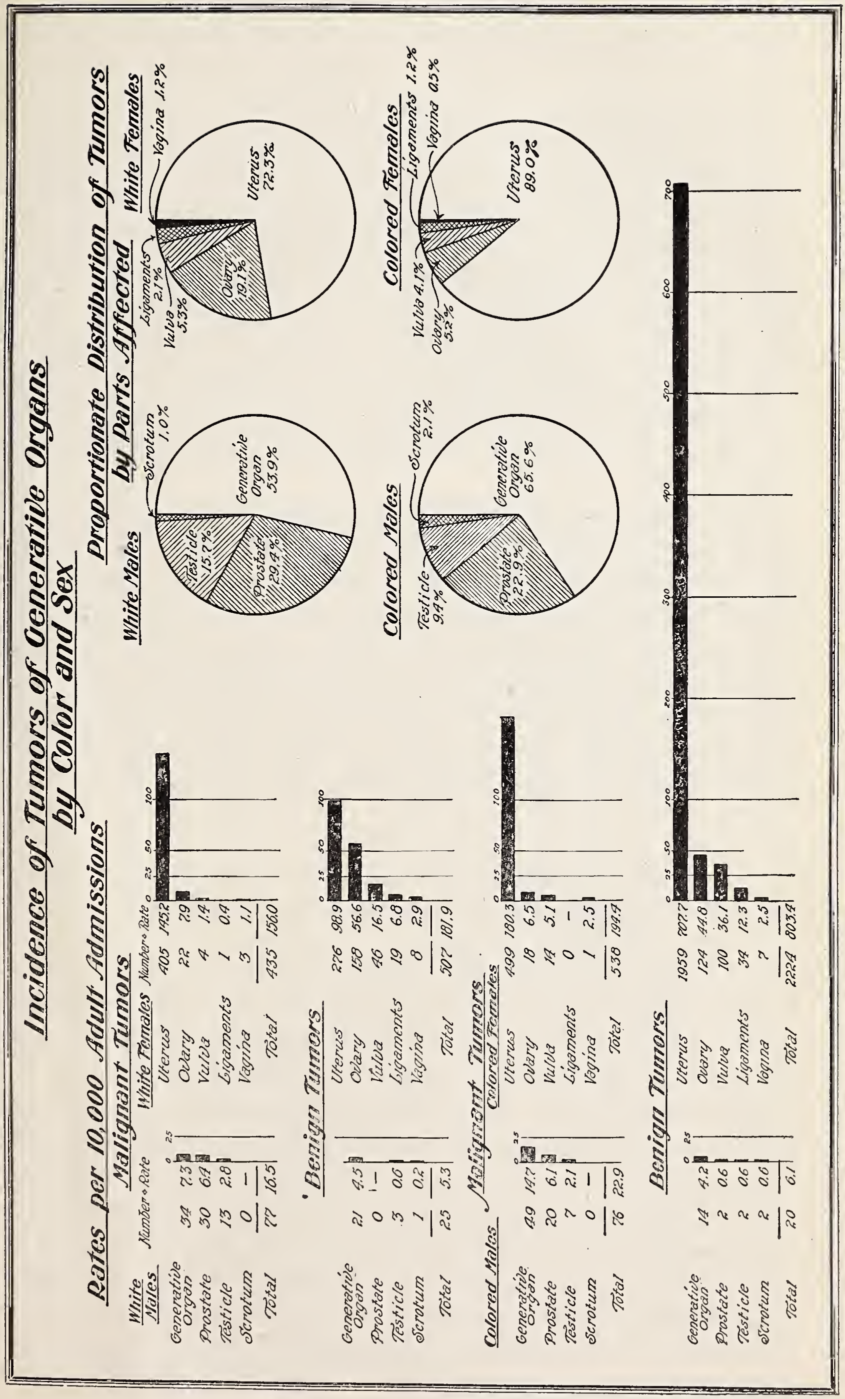
White Patients — Colored Patients

White Patients Rates	White Patients Number	Organs and Parts	Colored Patients Number	Colored Patients Rates
38.8	289	Buccal Cavity	107	17.6
40.8	304	Stomach and Liver	169	27.7
17.8	133	Peritoneum, Intestines, Rectum	84	13.8
58.3	435	Female Generative Organs	538	88.3
21.2	158	Breast	224	36.8
42.1	314	Skin	4	6.7
77.4	577	Other or Unspecified Organs	341	56.0
296.4	2210	Total	1504	246.9

Benign Tumors

White Patients Rates	White Patients Number	Organs and Parts	Colored Patients Number	Colored Patients Rates
5.1	38	Buccal Cavity	34	5.6
0.1	1	Stomach and Liver	2	0.3
3.9	29	Peritoneum, Intestines, Rectum	23	3.8
68.0	507	Female Generative Organs	2224	365.1
4.4	33	Breast	42	6.9
15.8	118	Skin	55	9.0
35.0	261	Other or Unspecified Organs	271	44.5
132.3	987	Total	2651	435.2

Statistician's Department, The Prudential Insurance Company of America



Benign and Malignant Tumors
Charity Hospital, New Orleans, La., 1910-1919

Incidence of Tumors of Generative Organs by Color and Sex

Rates per 10,000 Adult Admissions

Malignant Tumors

White Males	Number	Rate	White Females	Number	Rate
Generative Organ	34	7.3	Uterus	405	145.2
Prostate	30	6.4	Ovary	22	7.9
Testicle	13	2.8	Vulva	4	1.4
Scrotum	0	—	Ligaments	1	0.4
			Vagina	3	1.1
Total	77	16.5	Total	435	156.0

Benign Tumors

White Males	Number	Rate	White Females	Number	Rate
Generative Organ	21	4.5	Uterus	276	98.9
Prostate	0	—	Ovary	158	56.6
Testicle	3	0.6	Vulva	46	16.5
Scrotum	1	0.2	Ligaments	19	6.8
			Vagina	8	2.9
Total	25	5.3	Total	507	181.9

Malignant Tumors

Colored Males	Number	Rate	Colored Females	Number	Rate
Generative Organ	49	14.7	Uterus	499	180.3
Prostate	20	6.1	Ovary	18	6.5
Testicle	7	2.1	Vulva	14	5.1
Scrotum	0	—	Ligaments	0	—
			Vagina	7	2.5
Total	76	22.9	Total	538	194.4

Benign Tumors

Colored Males	Number	Rate	Colored Females	Number	Rate
Generative Organ	14	4.2	Uterus	1959	707.7
Prostate	2	0.6	Ovary	124	44.8
Testicle	2	0.6	Vulva	100	36.1
Scrotum	2	0.6	Ligaments	34	12.3
			Vagina	7	2.5
Total	20	6.1	Total	2224	803.4

Proportionate Distribution of Tumors by Parts Affected

Statistician's Department, The Prudential Insurance Company of America for the colored. These figures would clearly indicate that the negro cases received qualified medical and surgical treatment probably as promptly as the white patients.

16. Among other important specialized aspects of the cancer problem, attention is drawn to the apparently *increasing frequency of cancer of the tongue* in its relation to syphilis; to the possible errors of diagnosis in ignoring the *fever factor in cancer;* to the apparent relation of *coal smoke* to cancer causation; to the exceptionally important aspect of *intestinal stasis* as a precancerous condition; and to recent fallacious arguments regarding the alleged dangers of X-ray exposure. All of these are suggestive of the direction in which practical cancer research can be of material importance to the cause of cancer control.

17. There are appended to the paper some supplementary notes on the incidence of tumors among surgical patients treated in the Mission Hospital at Kashmir, with particular reference to *Kangri cancer;* some brief observations on the mortality from cancer in the Island of Ceylon; and also some extended observations on *adenoma of the uterus,* particularly with reference to the work of Dr. Thomas S. Cullen. All of these suggest important aspects of the cancer problem deserving of much more extended consideration, particularly in the South.

TRIBUTE TO DR. F. L. HOFFMAN.

BY RUDOLPH MATAS, New Orleans.

In responding to a call of the Chairman to speak on Dr. Hoffman's address, I feel that all that I can say will resolve itself into an appreciation and eulogy of his splendid work.

My relations with Dr. Hoffman date back a quarter of a century. Our acquaintance had its origin in a common interest in the great racial problems of the South. He was interested in the negro question as a vital statistician by profession, and embraced in his research all the facts that could illuminate the problem as exhibited in the comparative morbidity, mortality, and fertility of the negro race. He studied the African before and after his transplantation to American soil and the influence exercised by his environment upon his physical, economic, social, and moral evolution; and finally, the reactionary effect of his presence on his environment.

From this high and broad platform he surveyed all the aspects of the problem, and his great work "On the Race Traits and Tendencies of the American Negro", published in 1896 by the American Economic Association is an encyclopedia of incomparable value, bristling with facts, tables, and observations based upon a mass of new statistical evidence gathered from every available world source, in a way that for thoroughness has never been surpassed. If Dr. Hoffman had begun and ended his scientific career with this single publication, it would have sufficed as a lasting monument to his genius as an analytical and constructive statistician.

In 1896, I published a monograph on the "Surgical Peculiarities of the American Negro," an essay based on the statistics and records of the Charity Hospital. It was published in the Transactions of the American Surgical Association for that year. It was an effort to utilize the vast material of that institution on the comparative pathology of the negro from the surgeon's point of view. The paper was already in press when Dr. Hoffman's book came to me, too late to profit by his magnificent researches. I was then able to add only a few supplementary notes which showed that our conclusions harmonized, though arrived at from different angles. This was a source of gratification to me. Incidentally, I had learned to appreciate by a mere taste of the cup of statistical wisdom, what vast labor was necessary for this mode of research and how deep and how far one could dig with profit for hidden treasure with the help of the statistical tool, when this was wielded by the hand of such a master as Dr. Hoffman.

From the day that Dr. Hoffman's great work on the race traits of the American negro came to my hands I have followed his marvellous career with ever increasing admiration. His kindly encouragement, also, at a time when I was, in comparison to his knowledge, a mere boy peering curiously over the fence that bounded his immense possessions, has added a personal note to the general debt that in common with the rest of the profession, I owe him for the educational benefits that have come to us through his original investigations and unparalleled industry.

When we consider the immense scientific and literary output that has continuously streamed from Dr. Hoffman's tireless pen, and the labor involved in its production, in the course of the last 30 years, one stands in wonder at the dynamic energy that lies behind his seemingly frail form, and marvel that one man should be capable of such incessant, diversified and fruitful productiveness. As the years roll by and the tide of his contributions rise higher and higher, I am reminded of a familiar ditty of my school days: "and still the wonder grew that one small head could hold all it knew."

There are no great problems of population, or morbidity, mortality, and fertility which affect the physical, economic, social and moral welfare of the race and of the nation that he has not made a part of his domain and illuminated in some way by the penetrating light of the statistical method. Medicine is especially indebted to Dr. Hoffmann, as witness his studies on tuberculosis, malaria, cancer, leprosy, and what not, which have given him world-wide fame and authority. But apart from the benefit that we as medical men have derived from Dr. Hoffmann's statistical researches, Louisiana owes him a special debt of gratitude for his studies and original investigations on the vital movements of the population of the state; a labor which he has accomplished at the cost of great personal sacrifices. Some of the results of the research which he has carried on for years have been published through the liberality of the Prudential Insurance Company and other publications. But his great work on Louisiana remains unappreciated at its full value in the form of a large typewritten volume which in 1915 he presented to the library of the Medical School of Tulane University where it may be consulted with profit by all students of the sanitary history of this State. It is a unique document, a rich treasury of statistical data and conclusions, nowhere else available, as it is purely personal and the result of the most painstaking investigation of the vital statistics of this State from the earliest colonial days to the present. The document is too valuable to remain idle in its unpublished form and should be printed, as we hope it will soon, for general circulation as a public document by the State government.

The statistical lessons brought out by Dr. Hoffmann in this evening's lecture emphasize the importance of the Charity Hospital as a repository and center of information on all questions related to comparative racial pathology. The outside world with good reason, expects the Charity Hospital to provide accurrate collective information on questions which involve the comparative pathology of the negro and we should be prepared to furnish this information whenever obtainable within the limits of our experience.

Only a few days ago, I received a letter from the Chairman of the Committee on Anesthesia of the Medical Society of Ohio, in which he asked for our experience on the relative fatality of anesthetics in the negro as compared with the white. He wrote that the question had been suggested by the statement of a prominent surgeon of national fame, in Ohio, that the negroes are not as amenable to general anesthetics as the whites. He cited the case of a negress suffering from a hyperthyroidism who died on the table while under gas-ether-oxygen anesthesia, preparatory to a goitre operation. The surgeon in attendance was inclined to attribute the anesthetic death to race idiosyncracies. The Chairman of the Committee was interested in getting out local experience in this matter, but we were not able to furnish any collective statistical data and only our opinion based upon individual experience. This experience, I am sure, will show that in equality of circumstances there are no differences between the white and black races in the effects of anesthetics. But we should have been prepared to prove or disprove this assertion by the collective experience of the Hospital based upon the statistics of the recorded anesthesia deaths or, at least, the deaths on the table that could be legitimately attributed to anesthetics alone. Steps have been taken to improve the records by a separate tabulation and analysis of the causes of death on the operating table, including the so-called anesthetic death as exhibited in both races. This incident is mentioned in no spirit of criticism of the Hospital records, but merely to show the importance of the Charity Hospital as a source of authoritative information in the eyes of the outside world. The Charity Hospital with its immense and available data, properly compiled, tabulated and edited in its yearly reports, as brought out by Dr. Hoffmann, could and should be one of the world's greatest repositories of information on living racial pathology.

It is given only to a few to possess the key to the statistical method and to handle it with that mastery that is necessary to unfold great and illuminating truths and generalizations, but none of us can fail to appreciate the results obtained by the statistician's labor. As medical men we are grateful to Dr. Hoffmann for coming here tonight to emphasize many of the lessons that we had gathered from his teachings in the past and to supplement these with the added results of his latest investigation, thus confirming the high estimate that the medical world has given to his unfailing sympathy and unflagging interest in our most difficult professional problems. What we can do and should do is to follow his suggestions for the betterment and completeness of our institutional records so that these may prove still more helpful to ourselves and to the scientific world.

NOTE:—

Preliminary report on the Health Conditions in Louisiana, 1770-1877.
Preliminary report on the Health Conditions in Louisiana, 1878-1907.
Vital Statistics of New Orleans, 1787- 1909.
Three bound volumes presented by the Prudential Ins. Co. of America, Frederick L. Hoffman, Statistician, November 13th, 1913.

PROCEEDINGS OF THE STAFF OF TOURO INFIRMARY.

MEETING OF APRIL 13, 1921.

(CONTINUED.)

DR. J. P. LEAKE: I merely want to report a few experiences of the past winter where measles seemed to play some unusual pranks. It is understood that the rash of measles is supposed to appear later than in other exanthemata, 72 hours being the time described by old text books. However, we have all had to wait four or five or even six days in some instances before our diagnosis was confirmed. In the cases I have in mind, it was not so much the question of the time required for the eruption to appear as it was the influence on symptoms presented before any evidence of measles was noted.

The first of these cases was that of a boy who was brought to my office about two years ago, his parents having noted that his hearing was very defective. He was a typical mouth breather, with enlarged tonsils and adenoid. After correcting the condition in his throat, his hearing became normal and remained so about eight months. A slight cold blocking his Eustachian tubes made it necessary for him to return for treatment at the expiration of that time. His hearing appeared very bad; he could not hear the voice in ordinary conversation, nor could he hear a loud ticking watch except on contact with bone. This condition was remedied immediately upon gentle inflation; a few visits only were necessary. After a few months, however, he was brought back but was relieved as promptly as on previous occasions. About six weeks ago, he returned, his hearing being defective again. Upon inflating his ears, his hearing was normal immediately and remained normal for two days whereupon he returned for further treatment, the result being the same. He came the next day, however, saying his ears were blocked again. There was not any apparent result from inflation. He came every day for about twelve days and left the office without any benefit. His parents became very much discouraged and so did I. Two days after his last visit his mother phoned saying he was confined to his bed with measles and asked what should be done. She was advised that it would be impracticable to carry out any treatment at the time but was requested to let me know if he had any pain in his ears. About eight days later having recovered from measles, he was brought back. His hearing cleared up immediately on inflation and has remained normal since. I would not know how to account for the obstinacy of this last attack unless it were caused by the impending attack of measles.

The next case is that of a little girl living a few blocks above. I was asked to see her and called late in the afternoon after my office hours. Her sister, a professional nurse, was very much disturbed because the attending physician, unable to call that day, had sent an associate, who had pronounced the case "pneumonia". The pneumonia was very apparent. From the history, I learned that the child had been in bed five days with fever. Having been exposed to measles, and as measles was prevalent at the time, it was thought that that was what was in store for her. Her physician had gone over her carefully every day without any definite findings. The child had complained of pain in her ears on the previous night which accounted for my being called in. Upon examination, I found a double middle ear abscess. The child was so profoundly toxic, I thought it inadvisable to give an anesthetic. A double parancentesis was done, the child scarcely rousing when the drum membranes were opened. She went through five rather stormy days and nights, whereupon her temperature became normal and her lungs began to clear. As her ears were draining satisfactorily, I discontinued my visits. About a week later, I was requested to see the child again. Upon calling I found her covered with the rash of measles. In this case, it seems to me that the complications and sequela preceded rather than followed the measles.

Dr. I. I. Lemann: Unfortunately, the patient whose case I wish to report has not come tonight, although he promised to do so. This young man was formerly a helper in the pharmacy here about 1916. He was brought to the Medical Clinic a number of times and he was then complaining more of constipation than anything else and loss of appetite. He was a fresh immigrant from Russia.

A few months later he was admitted to the ward because he continued to lose weight. A diagnosis of pulmonary tuberculosis was made upon the basis of physical signs and positive sputum findings. He was sent to Covington in October, 1916.

He had had pulmonary hemorrhages for three days. While he was in Touro and before he was sent to Covington, glycosuria was noted and from the time he was admitted to Touro in 1916 to the present, I have seen him nearly once a year except during the period that I was absent in the service. The boy who is now 26 years old had quite an extensive tuberculosis of both lungs and particularly of the right lung and, during the first four years, the tuberculosis was active. Rales could be heard, and he continued to have a little fever all the time, but, in spite of that, he gained strength and weight. For example, he weighed 118 in 1919 and two years later I found he weighed 154 lbs. Each time there were traces of sugar in the urine. Last year, he reported and I found he had gone up in weight still further so that he weighed around 160 lbs. The tuberculosis was still active and he still had glycosuria. He came back last year and at that time I suspected that we were not dealing with a true diabetes mellitus. I had a blood determination made on a fasting stomach in 1920 and the reading was normal, one-tenth of one per cent. I wanted him at that time to permit a blood sugar curve to be made but he would not submit to it. I have been successful this past week in having such a curve run and it is extremely interesting to see that while he has traces of sugar in his urine almost constantly—and without regard to the food at all, his blood sugar content is normal and the blood sugar curve shows that he has a low renal threshold. There is no plateau in the blood curve such as we see in the true diabetic. Here is his curve (curve shown). It starts off with a blood sugar with less than normal—of .076 on a fasting stomach with no sugar in the urine. At the end of half hour, the blood sugar had gone up to .13 which is below the normal renal threshold. The normal has been worked out to be around from 16 to 17 hundredths per cent. Nearly three per cent sugar appears in the urine. The blood curve immediately falls and at the end of three hours has reached its former level of .07. In the meantime, sugar in the urine has disappeared so that it has reached its nil point at the end of three hours. If this had been a true diabetic, his blood curve would have risen promptly but would have remained up for several hours and then have made a very gradual descent.

The interesting point from a scientific point of view is that we should have expected in the true diabetic combined with a tuberculosis a fatal result long before this. From a very practical standpoint, this young man has been maintained by the Charities in part and part by Touro. If he had tuberculosis and diabetes, we should expect him to be absolutely helpless and the Charities and Touro would be justified in maintaining him. This young man can be justly expected to earn his own living.

In this connection I have a number of blood sugar curves which will illustrate other interesting points. One of them is the blood sugar curve in a case of pregnancy. This lady was sent to me in the seventh month of her pregnancy because shortly before she had developed a glycosuria—not a lactosuria—and she had been very sharply restricted in her diet and fed very largely on fats so that when she came, she had acetone and diacetic acid in her urine but with no sugar. We found, in the course of a few days' observation that the change of diet had very little relation to her glycosuria which was never more than a small trace while she was here.

A blood sugar curve on her showed a perfectly normal curve going rapidly up and rapidly down. This lady's glycosuria was dependent upon what has been demonstrated in the last four or five years, namely, a lowered renal threshold in pregnancy. She was told to go home and given a very liberal diet. She was delivered of a healthy child and has remained free of glycosuria since. This makes a tremendous difference in the outlook of patients' glycosuria in pregnancy. I have the pleasure next week of presenting a paper at the State Medical Society meeting on "Diabetes in Pregnancy" and I shall try to show there is considerable difference in the outlook of pregnancy occurring in women already diabetic and glycosuria occurring in a pregnancy for the first time. It seems from a review of the recent literature the type of renal diabetes in pregnancy is very common. Perhaps, it is a normal occurrence and should not cause alarm. In a woman already diabetic, pregnancy is very serious. Even there, I might say parenthetically, straying a bit from my subject, that the occurrence of pregnancy in a woman already diabetic is not always the matter of dire import that has hitherto been thought. I have in my records a case of pregnancy in a young woman already diabetic where the glycosuria really disappeared during pregnancy to reappear after the pregnancy was over. The carbohydrate tolerance was increased during pregnancy. At least half a dozen such cases are in the literature.

She was delivered of a healthy child and lived for four years after confinement and might not have died then if she had lived reasonably within the rules.

It seems to me the care of diabetic pregnant women is more hopeful than we have hitherto thought. The matter of these blood sugar curves is also of considerable importance when we have to deal with persons who have occasionally a trace of sugar in their urine. For example, a young woman came because she had been rejected by a life insurance company on application for a policy. It was possible to show in her case that the blood sugar curve was absolutely normal, and she was not a true diabetic. Recently, a man who had had his toe bruised by having some heavy object fall upon it came to me. He had been under the care of a prominent surgeon for several months. It seemed to be nothing more than a bruise under the skin, but the toe was sore. The man had no sugar in his morning urine, but had sugar in his urine after a heavy meal and it seemed to me at first there was some relation between the glycosuria and the failure of the toe to get well. Presently, the toe did get well on restriction of carbohydrates. However, his blood sugar curve was normal and I don't believe this man represented more than a lowered renal threshold. The failure of the toe to get well had nothing to do with the occasional signs of sugar in the urine. A lowered renal threshold is much more common than we think.

It is possible that cases we call alimentary glycosuria are not disturbances of liver, and are certainly not true diabetes, but may be due to an increased renal permeability.

DISSCUSSION.

DR. LANFORD: Dr. Lemann has shown clearly the importance of the study of the blood sugar content in those cases in which sugar appears in the urine. This study in conjunction with the percentage of excretion which takes place in the urine was first worked out by Hamman and is known as the "Hamman curve." It has been shown that sugar may appear temporarily in the urine under certain conditions and, therefore, it is important to determine whether a glycosuria is temporary or is actual evidence of a pathological condition. It is of importance to determine this for several reasons, chief of which is from a standpoint of prognosis and treatment. In addition, it occasionally happens that a man applying for life insurance will be declined due to the fact that he has reducing substances in the urine. I had an opportunity to assist a prominent man in obtaining an increase in his insurance some time ago. This man had been declined for life insurance because he had a transient glycosuria but it was shown this condition was due to an error of diet and not to a pathological condition in his organs. The plan followed in the laboratory of Touro Infirmary is to determine the body weight of the patient in kilograms. The patient is not permitted to take any food or water in the morning, and his blood and urine are taken in this state of fasting. He is then given one and seventy-five hundredths grams of dextrose per kilogram of body weight dissolved in sufficient water not to be nauseating and this followed by enough water to make his entire intake 500 cc. Blood is taken at the end of one-half, one, two, and three hours after the dextrose meal and the patient is requested to pass all urine at the same time. The amount of sugar is determined in the blood by the Folin-Wu method and the amount of sugar in the urine determined by Purdy's test. Results have been quite gratifying and have been well explained to you by Dr. Lemann.

The Chemical division of the Laboratory is under the immediate charge of Dr. M. P. H. Bowden.

Dr. J. B. Guthrie: The examination of blood for sugar content has become a relatively simple procedure of clinical laboratory work. I have worked out a little modification of the technique which has been of assistance to me in using the smaller apparatus. A few grains of powdered potassium oxalate are put into a watch glass and the patient's blood, obtained by needle puncture of the finger, is expressed into the watch glass. The potassium oxalate is stirred into the blood with a small rod and the watch glass set aside under cover, its contents to be examined within a short time.

I have seen patients who have objected to the repeated venous puncture for obtaining serial blood examinations but who apparently did not oppose the needle puncture for the same purpose. We are all agreed as to the diagnostic value of the curve of blood sugar after the test meal of glucose. There surely could have been no correct conclusion reached regarding Dr. Lemann's case except after the blood sugar estimation was made.

Dr. C. J. Miller: My experience with cases of pregnancy complicating diabetes has been limited, but it has been different from the report given by Dr. Lemann. We do not see so many of these cases because a great many diabetics appear to be sterile so, therefore, one practitioner would not have sufficient material from which to draw definite conclusions.

The effect on the child is of interest. In practically 20% of the cases, the children are either born prematurely and do not survive and the mortality after pregnancy is over is also high. It is very common to find a trace of sugar in the urine in the last two months of pregnancy. This should be borne in mind as it could be very confusing both in the management of the case and the prognosis. I agree with Dr. Lemann that these cases should be carefully investigated because many of them are nothing more than lactosuria while others may have a serious ultimate result.

Dr. J. W. Newman: Were any observations made on colored women? I think it is remarkable that we should see such a large number of cases of Glycosuria in the colored; it is entirely out of proportion to the number seen in the colored male. We have had in the Lying-in Hospital not less than 50 cases show sugar in the urine on routine examination. Our results have been most gratifying; contrary to what Dr. Miller states, the majority of them have carried to term and in the few cases where labor has set in before term, i. e., in the seventh or eighth month, it was due to other causes, with the diabetic contributing. As far as the life of the children is concerned, they have lived and no increase in the mortality noted from patients suffering from glycosuria. No precaution is taken—because a large number of cases, no matter how we tried to impress it upon them, did not follow our orders as to diet. In the last group of cases, we gave no orders and results were just as good. All of the cases, with one exception, cleared up without treatment.

Dr. C. J. Miller: I should like to ask Dr. Newman whether the cases he reports were lactosuria or glycosuria? I am rather surprised to hear such a large percentage of cases in a limited service. Since there is a trace of sugar in such a large percentage of cases towards the end of pregnancy, it is possible that many of them were cases of lactosuria and of little consequence. It would be interesting to know how many of Dr. Newman's cases were true diabetics.

Dr. Newman: In the majority of cases, there was no sugar before but found from three or four months on.

Dr. I. I. Lemann: I think that Dr. Miller is correct. In stressing the fact, I may have understated the seriousness of diabetes in pregnancy. While certain collections in the literature indicate what Dr. Miller says is his experience, that is about 25 per cent. of the mothers die during pregnancy or during labor and about an additional 25 per cent more within two years after confinement, still these collections antedate modern methods of treatment. It seems to me that in view of more recent experiences, we shall be rather more hopeful about the outcome of pregnancy in diabetic women when it does occur. For example, Van Noorden reports he had not seen any unfavorable influence upon the diabetics in pregnancy or puerperium in five women coming under his observation. Allen working with dogs has not been able to see that diabetes increases the severity and Joslin suggests that the aggravation of the glycosuria may be due to overfeeding rather than to the course of the pregnancy. The future handling of pregnant diabetic women may, therefore, proceed along different lines than that advocated in the texts. One sees repeated suggestions that pregnancies should be at once terminated, especially in early months in women previously known to be diabetic. Naunyn stated that he did not think that pregnancy should be interrupted except for good cause, such as the increase of glycosuria beyond control or increasing weakness or the occurrence of polyhydramnics which occurs frequently in pregnancy.

My own experience is not large, but the few cases I have seen make me feel more hopeful and believe that we should not advocate termination of pregnancy.

As regards lactosuria versus glycosuria, that differential diagnosis has not always been made. When it has been carefully made, as by Ney, for example, it was found that only 16 per cent of pregnant women showed lactosurias while 77% of women in the puerperium and at the time of labor showed lactosuria.

One further word of caution even about my case. These women who have shown glycosuria in repeated pregnancies must not be taken to represent necessarily innocent affairs. Foster for instance has reported a case where during two pregnancies a woman had apparently transient glycosuria, an innocent affair. In the third pregnancy, she developed intolerant thirst and other manifestations and after this pregnancy did not get rid of the glycosuria and finally became a confirmed diabetic. Not until the obstetrician joins hands with the internist in differentiating these various glycosurias shall we be able to clear up the confusion now existing. Even standard text books such as De Lee advocate routine termination of pregnancy in diabetics while practically all of the leaders in the investigation of diabetes from the time of Naunyn to Joslin are against interrupting pregnancy.

DR. A. B. PITKIN: It is my pleasure tonight to exhibit the Benedict metabolism apparatus with which the basal metabolism is determined in a practical way without any sacrifice of its value within normal clinical error, to point out the possible sources of error and how they may be overcome and finally to report on a few cases which have come under my observation during a series of determinations which will no doubt be of interest to you and demonstrate its clinical value as well.

By "Basal Metabolism" or "Basal Metabolic rate" is meant the minimal heat production of an animal measured 12-18 hours after the ingestion of food and when at complete muscular rest. With this apparatus the heat production is determined specifically from the gaseous exchange within the body of the oxygen consumed and the carbon dioxide produced; the determination of the total nitrogen in the urine, regarded as a negative factor for ordinary clinical use, is omitted.

With an increase in the metabolism, there is naturally an increase also of the oxygen consumed and carbon dioxide produced in the individual which is in proportion to the increase in metabolism. Lavoisier in 1780 discovered and named oxygen and only in last decade has it been demonstrated that the oxygen requirement was greater in a fasting subject at work than when at rest and also that the requirement was greater after the ingestion of food. Likewise in pathological conditions which alter the body chemism there is a disturbance of the gaseous exchange of oxygen and carbon dioxide in proportion and a greater or lesser amount of oxygen is required dependent upon the character of the alteration. The determination of the basal metabolic rate, therefore, is a valuable aid in the interpretation of any state. Determining the oxygen consumption in a given time, the heat production, equivalent to the metabolism of the body, is very easily determined and by comparison with the normal standard for the individual case, any variation is noted.

The Benedict apparatus is of the "closed-circuit" type into which the patient breathes oxygen of a known amount. A spirometer, containing the oxygen, is inserted in the circuit which acts as a breathing chamber, rising and falling with respiration; a thermometer inserted in the spirometer makes possible the observation of any changes in temperature of the oxygen. The gasometer is calibrated in cubic centimeters and the readings are made at the end of normal expiration. The apparatus is adjusted to the patient by means of a rubber mouthpiece and nose clip. A jar of soda-lime inserted in the circuit absorbs all of the carbon dioxide produced and by means of a blower the contents of the spirometer are made to pass through the soda-lime about three times a minute. The loss of oxygen in the spirometer after a determination is made, accurately represents the oxygen consumed in a given time. It is necessary to know the heat value of the oxygen consumed and this is determined from the respiratory quotient, that is, the quotient of the carbon dioxide produced divided by the oxygen consumed. The respiratory quotient is not determined in each individual case, as Benedict found that an average respiratory quotient of 0.82 was very constant, and it is used in the determination; this quotient responds to the caloric value of 4.825 per liter of oxygen. Two corrections are necessary—temperature and barometric. DuBois in 1915 demonstrated that the heat production of an individual was proportional to the height and weight and after actual measurement of a number of subjects, he devised a formula with which the total square meters of a surface area may be determined with the weight and height known. Later Aub and DuBois constructed a chart from this formula by means of which the surface area can be estimated at a glance. With the use of this chart, Aub and DuBois constructed a series of normal standards for age and sex and it is with these standards that we compare the metabolic rate determinations. It is possible in this way to arrive at the metabolic rate of a patient within plus or minus 10%, so that observations within this limit are regarded as normal. The total oxygen consumption, corrected, multiplied by the caloric value of oxygen at the average respiratory quotient gives the total heat production for one hour; this divided by the surface area, taken from DuBois' chart gives the metabolic rate expressed as "calories per square meter per hour." This then compared with the normal standard gives any variation that is present. The physic side or "personal equation" plays a big part in correct observations and co-operation is essential; it can be plainly seen what havoc would result from irregular respirations particularly at the end of an observation; also any movement which would disturb the complete muscular rest which is essential or undue apprehension and nervousness on the part of the patient; especial care must be taken to guard against leaks in the apparatus and around the mouthpiece or nose clip as the loss of oxygen in the spirometer during an observation is all charged up to the patient, called oxygen consumed, and is the basis of the calculation of the heat production or metabolism; other sources of error of course are readings on the gasometer and the thermometer.

The determination of the metabolic rate has a fixed position in medicine, despite the sudden widespread clinical interest displayed which usually attends something "new" not only because of its aid in diagnosis but also in the treatment of many conditions. Just as the thermometer is valuable in separating cases into two great groups, febrile and afebrile, so the metabolic rate determination has its value in separating the cases into three classes—those with normal rate, increased rate and decreased rates. A few cases have come under my observation which bring out very clearly the value of this determination and I will briefly report them to you:

Case 1. Diagnosis—Exophthalmic Goiter—duration 7 years; started with "nervous breakdown"; lost 20 pounds; noticed enlargement of thyroid and shortly afterward the exophthalmos. Dizzy spells on least provocation which last for over a week; has been practically in bed since this time; has had X-ray exposures with apparent relief. Marked tremor, sweating and flushes; Von Graefe's sign; Pulse 120-130. Goetsch test markedly positive. Age 35 years. 2/16/21-B. M. R. plus 71, Pulse 130. Complete rest in bed with sedatives; 2/23/21-B. M. R. 36%, Pulse 112, R. 16. Cuneiform section of both lobes leaving approximately 1/4 of gland on 2/24/21. Discharged on 2/28/21 after an uneventful convalesence (maximum temperature 101 degrees; pulse 140 for 36 hours following operation, then gradual reduction in rate) B. M. R. at this time, plus 19.5%, Pulse 102, Respiration 21. 3/23/21 (5 weeks post operative)—B. M. R. plus 16%, Pulse 82, Resp. 16. Tremor slightly noticeable; patient feels a great deal relieved; has been to the picture show several times without disturbance of any kind. This case was so toxic clinically that ligation after a preliminary rest was decided upon to precede thyroidectomy if reduction in the toxicity resulted; with the improvement shown by the metabolic rate determinations, thyroidectomy was performed without ligation; a typical though not severe reaction (thyrotoxicosis) followed but the patient made an uneventful recovery and continues to improve.

Case 2. Diagnosis—Fetal adenoma associated with hyperthyroidism. Age 36 years. Since 5 months, the patient is seized with sudden attacks vertigo lasting 6 hours; has noticed a slight swelling of neck particularly on right side of neck for several years. Subject to flushes and sweating on least provocation. Pulse 120. B. P. 120/70. 2/24/21 plus 28% P. (I. 20) R (I. 9) Thyroidectomy 2/15/21; 2/25—7.3% P. 104, R. 21.

The following are two examples of the so-called borderline cases:

Case #48. Age 25. Duration 11 years. (since puberty). No enlargement of gland; crying spells; nervousness; flushes; tremor. 4/2/21-B. M. R.—12.7%.

Case #38. Age 29 years; slight enlargement of thyroid. Duration 2 years. Nervousness. Flushes; weakness; slight tremor; Goetsch test mildly positive. 3/21/21, B. M. R. plus 22.2, P. 76, R. 24.

The next three cases are of interest because it brings out a plea for an answer to the question which has strong supporters on each side. One side is supported by Goetsch who claims that the commonest type of goiter with hyperthyroidism is the "diffuse adenomatosis" type, and in this type which presents remissions of symptoms although the pathology remains the same, will react positively to the epinephrin hypersensitiveness test while the metabolic rate is normal or low and is, therefore, the most reliable; the other side is supported by Boothby who insists that a negative metabolic rate rules hyperthyroidism out completely regardless of the clinical side of the case including the epinephrin hypersensitiveness test.

These cases present many of the earmarks of hyperthyroidism and yet present a markedly negative metabolic rate; in all of the three cases mentioned, the absence of hyperthyroidism was accepted:

Case #25. Age 30. Slight enlargement of thyroid; nervousness. Crying spells. Marked weakness. Loss of weight. Fairly marked tremor. Markedly Goetsch test. Clinical diagnosis—Mild toxic goiter (hyperplastic). 3/6/21—B. M. R.—46, P. 76, R. 24.

Age 41 years. Duration of symptoms 4 months. Sudden onset. Palpitation of heart 4 years following birth of child, more marked on exertion. Tonsillitis in Nov., 1920. Following noticed extreme nervousness which has not improved. Marked tremor. Marked loss of weight. Markedly positive Goetsch test. Tachycardia 130. Loud aortic murmur. B. M. R. 10.5% and 3.2% (observations 2 days apart:)

Case #5. Duration 3 years. Age 24 years. Sudden onset. Periodic attacks of tachycardia associated with dyspnea; marked tremor which is general. This patient was worked up in detail and sent to the doctor in charge with a positive diagnosis of exophthalmic goiter with everything complete and positive (including the Goetsch test) for hyperthyroidism, with the exception of a metabolism rate determination. The attacks which the patient had while under observation in the hospital were very transient, epileptoid in character; the Goetsch test performed by Drs. Gage and Field was negative and metabolic rate was -1.3% which is well within the normal limits of variation.

Case #8. This patient is very interesting from several viewpoints; she has definite clinical signs of being a case of hypothyroidism, in addition having a lowered mentality in the opinion of a neurologist. Apathetic and drowsy. Another point of interest—in the scale of standards for the normal metabolic rates according to age and sex (by Aub and DuBois) the youngest subject given is from 14 to 16 years of age, and the younger the patient the higher the metabolic rate, and this little patient is 10 years of age, and her metabolic rate variation was made by comparison with the standard for 14 years of age; the point to be brought out is that after several observations while under treatment she has improved to the point of showing a metabolic rate of a plus variation; Goetsch claims that a hypothyroid case should be given thyroid until the metabolism reaches normal and the epinephrin test is slightly positive; the latter has not been performed on this patient; the patient has changed in metabolic rate from -40.5% to plus 19%; the following observations have been made:

3/5/21, B. M. R. 40.5%; 3/22/21, B. M. R. -29.2%; 4/5/21, 4.8% 4/13/21 plus 19%. If the metabolic rate increases as the patient is younger then this is not the true status of affairs and the patient is not truly running a plus metabolism; since the first observation, the patient has been getting one grain of thyroid three times a day (Armour's preparation) and I am at somewhat of a loss to know how to instruct the doctor as to his procedure of treatment; conservatively, I have advised him to reduce the dose of thyroid, pending an epinephrin hyposensitiveness test, to gr. 1 a day for a period of a week and then make another observation on the metabolic rate.

Discussion.

Dr. C. S. Holbrook: I would like to go into details about the last case which Dr. Pitkin mentioned. The work that he has done in establishing the metabolic rate has been of great assistance in directing the treatment of this child who is now a girl of ten years. The patient is the second child and was a full-term baby, was delivered without the use of forceps and nothing abnormal was noticed at the time of her birth. She was somewhat slow in developing, sitting up at eleven months, walking at sixteen to seventeen months, though she said a few words before she walked. Her habits were quite easily regulated along normal lines.

She was considered normal until she went to school some four years ago. Then it was noticed that she "learned nothing the first half of the year, was very bad, did not mind and would not study at home." She was seen at this time by a physician and was given thyroid. She did very much better in every respect. For the past two years it has been noticed that she has done very well indeed when she was given thyroid and that her deportment and work at school were very poor during the time when she was not given the glandular extract.

The physical examination shows a large and rather well developed girl of ten years. She smiles in a silly manner and without cause. She is almost constantly moving in her chair or playing with her fingers. The thyroid could not be felt. Hair not coarse, skin normal. Examination otherwise was negative. A Binet-Simon test gives her a rating of nine years which is not especially bad.

With a history of the improvement that has followed with giving her thyroid, it was decided to make a careful examination with the use of the Benedict Metabolism Apparatus. Dr. Pitkin has conclusively demonstrated that this child is suffering from hypothyroidism, or deficient thyroid secretion. As will be seen at the first observation, she was well below normal, the rating being a minus forty. Since then, she has been on three grains of thyroid extract (Armour) per day and one will readily see what change has taken place. From a minus forty metabolic rate, she has progressed to a rate above normal. In the past, the therapy in these cases has been along anything but scientific lines. It has been rather customary to give an indefinite amount of thyroid, the amount varying very much according to the idea of the physician in charge. Treatment was generally given for a very indefinite period. There was no way to tell when sufficient had been given though we do know that occasionally toxic symptoms would indicate that too much had been given.

Now we have a scientific gauge or means of telling when therapy with thyroid is indicated and how much thyroid extract is required to keep a person in proper endocrin balance. In this particular case, we expect to do a number of estimations of the metabolic rate until we find what amount of thyroid extract she requires to keep the metabolic rate approximately normal and after this is established, treatment will be continued for months or years with an occasional examination with the Benedict Apparatus. We thus see that this form of treatment can be placed on a scientific basis and I believe that greater benefit in hypothyroid cases may be expected in the future.

Concomitantly with the approach to normal as indicated by the metabolism estimation, the conduct and the school work of this child have gradually improved until now she does her chores about the house with very little difficulty, dresses herself in considerable less time than formerly and gets her lessons with less prodding, although she is still considerably slow in most of her actions.

Dr. Randolph Lyons: The subject is so large that we can never get to the end of it, but it is interesting to note in the literature the conflict between the school which employs the basal-metabolic rate and that which depends mainly upon the Goetsch test. The followers of the Goetsch test seem to have faith in this test, but they do not deny the value of the metabolic tests. The basal metabolism school denies the value of the Goetsch test. It has been seriously questioned whether the epinephrin reaction is pathognomonic of hyperthyroidism. It signifies that there is a hypersensitiveness of the sympathetic system but not necessarily a hyperthyroidism proper. One of the cases reported by Dr. Pitkin was a patient of mine, that of a young girl 25 years old who developed a goitre at 15. During the last few years, she has developed nervousness, slight tremor of the fingers and some loss of weight. I suspected a possible hyperthyroidism but her metabolic rate turned out to be low. It is interesting in her case because it seems for some years when she was living in New York she was given thyroid. Some doctor apparently considered her a case of hypothyroidism. She did not think this thyroid medication did her any good; she lost flesh and finally dropped the medicine. I have not made any epinephrin test upon her yet but I intend to do so.

ANALYSIS OF HOSPITAL SERVICE.

(Representing all discharges in March, 1921.)

DEPARTMENT	INFECTIONS	DIAGNOSES			DEAD 48 hrs.	Total DEAD
Ear, Nose and Throat	147	134	7	5	0	1
Eye	30	10	17	3	0	0
Gastro-Intestinal	38	6	25	7	0	0
Gynecological	103	54	35	11	1	3
Medical	54	8	25	13	3	8
Neurological	13	1	5	7	0	0
Obstetrical	50	41	2	4	1	3
Newborn	32	32	0	0	0	0
Orthopedic	12	1	7	3	0	1
Pediatric	9	0	5	3	0	1
Skin	1	1	0	0	0	0
Surgical	180	86	72	13	3	9
Total	669	374	200	69	8	26

DEPARTMENT	INFECTIONS		DIAGNOSIS				Con-sultations
	Instl.	On Adm.	Agree	Disagree	Addl.	Tent. not given	
Ear, Nose & Throat	----	----	143	4	0	0	2
Eye	----	----	28	0	2	0	4
Gastro-Intestinal	----	----	31	2	3	2	4
Gynecological		----	82	9	12	0	1
Medical	----	----	44	5	4	1	9
Neurological	----	----	11	2	0	0	6
Obstetrical	----	----	49	1	0	0	1
Newborn	----	----	32	0	0	0	1
Orthopedic	----	----	11	1	0	0	0
Pediatric	----	----	7	2	0	0	2
Skin	----	----	1	0	0	0	0
Surgical	1	1	157	14	8	1	7
Total	1	1	596	40	29	4	37

Caesarian Section	2
Multiple	0
Breech, Footling, etc.	1
High Forceps	0
Mid Forceps	0
Low Forceps	2
Stillbirth	1

NEWS AND COMMENT.

TULANE UNIVERSITY COMMENCEMENT EXERCISES. Tulane University held its annual commencement exercises on June 8, graduating over 250 students in the various departments of learning. The School of Medicine conferred the degree on 111 graduates, while there were 15 on whom the degree of Graduate in Pharmacy was conferred, and 2 who received the degree of Pharmaceutical Chemist. The School of Dentistry had 14 graduates. The Graduate School, through its Dean, Dr. Chas. Chassaignac, reported an attendance of 221 students representing 30 states of the Union and one foreign country. The states ranged from Oregon to Washington in the Northwest, to New Hampshire in the Northeast, and California in the Southwest and Florida in the Southeast.

"RADIO ELEMENTS AND THEIR APPLICATIONS." This is the title of a lengthy review to appear in the July issue of the *Medical Review of Reviews,* an original contribution by Mme. Curie and it is said to be the first and only contribution which this noted scientist has made to an American publication and for that reason is extremely valuable. A number of the July issue containing the article will be sent gratis to any physician making the request. Address the Medical Review of Reviews, No. 51 East 59th Street, New York.

PEKING UNION MEDICAL COLLEGE. The following announcement is made by the Faculty and Trustees of the Peking Union Medical College: The dedication of the buildings of the Peking Union Medical College will take place in Peking, China, and at the same time a medical conference will be held from September 15 to 22. The inauguration of the new President, Dr. Henry Spencer Houghton, will form a part of the meeting and it is expected that scientists from various parts of the world will attend.

THE MULFORD BIOLOGICAL EXPLORATION leaves America on June 1 to disembark at Antofagasta, Chili, from there to go to La Paz, Bolivia, and thence on its journey through a practically unknown region of that section of South America to the Madeira and Amazon Rivers. The general purpose of the expedition is to seek new information concerning useful drugs and ingredients of value to medical and pharmaceutical science.

Dr. Frederick L. Hoffman, Vice President and Statistician of the Prudential Life Insurance Company will join the expedition, which is under the leadership of Dr. H. H. Rusby.

NINE NEW PUBLIC HEALTH SERVICE HOSPITALS have been added to the hospital program of the United States and it is expected that these will accommodate more than 3,000 people. Three of these are in Iowa, Montana and Oregon, which will be ready within two months. Others will not be ready for some time. Walla Walla, Washington; Chicago; Fort McKenzie, Wyoming; Fort Logan H. Roots, near Little Rock, Ark., are sites at which either new preparations are being made for the accommodation of patients or the hospitals already in operation have been abandoned because of insufficient accommodations, but will now be restored to their former use. A Naval Station at Gulfport, Miss., has just been taken over by the Public Health Service and will be utilized as a hospital, or maybe a home for some branch of the service.

PHILADELPHIA COLLEGE OF PHARMACY. The plans for the raising of a $2,000,000 fund for the purchase of a new site and the erection of suitable buildings for the Philadelphia College of Pharmacy have been postponed since the inauguration of Admiral W. C. Braisted, M. C. U. S. Navy (Ret.) as President of that institution. The extensive preparations which had already been made will not be wasted as the local and national organizations will be held in their present form to function at a future time to be fixed later on. Only the fund raising movement is postponed. The Centennial celebration and all things incident thereto will proceed according to the program.

HIGH MORTALITY RATES. The U. S. Department of Labor released for public information on June 6 bulletin 1262 which gives the following facts: "In the United States in 1919 one mother died for every 135 babies born, and every eleventh baby born died before he was a year old. That these rates are excessive is shown in 'Save the Youngest', a bulletin issued by the U. S. Department of Labor through the Children's Bureau, and just revised to compare the latest rates for the United States with those of foreign countries. Six countries are shown to have a lower infant mortality and 16 in a group of 17, a lower maternal mortality, than the United States. Not only do we lose more mothers in proportion to births than practically any other civilized country, but we apparently lose more on an average each year than the year before. Whereas in other countries there has been a decrease in the death rate from childbirth, the rate at home rose from 6.1 per 1,000 births in 1915 to 6.2 in 1916, 6.6 in 1917 and to 7.4 in 1919. Moreover, in this country there is no appreciable decrease in the proportion of babies who die from causes largely connected with the care and condition of the mother.''

Legal Liability for Transmitting Infection. In ''Health News'', issued by the Department of Public Health, we are told that ''Personal responsibility for the transmission of venereal disease has now been upheld in several different phases of both civil and criminal courts'' and that in several instances the Supreme Court has upheld the judgment of the lower courts. Twenty states have already adopted laws forbidding persons with venereal diseases to marry, but all twenty do not require medical examination and certification that the applicant is free from venereal disease.

U. S. Civil Service Examinations. Applications will be received until June 28 for the position of anesthetist to fill a vacancy in Freedman's Hospital, Washington, at a salary of $1,200 per year, plus the increase granted by Congress of $20 a month with board. Vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination. Specify Form 1312 when making application for examination. Positions for Dental Laboratory Mechanics at salaries ranging from $900 to $2,400 a year, with the perquisites incident to the positions. Form 2356 necessary in making applications, which will be received up to August 1. The positions of Roentgenologist, from Associate to Junior grades, open for applications until August 1, under Form 1312, paying salaries according to rank. Applications for Reconstruction Aide will be received until further notice. Form 1312 is also used for application for this position.

The One Hundred and Fifty-Fifth annual meeting of the Medical Society of New Jersey was held June 14, 15 and 16, at Chelsea Hotel, Atlantic City. An interesting program was observed and everything possible was done to make the meeting a memorable one.

The Shreveport Medical Society will hold its next meeting at the Charity Hospital, Shreveport, Louisiana, on July 5.

The following papers will be presented: *Indications for Spectacles and Their Action in General,* by Dr. I. Henry Smith; with Dr. J. L. Scales to open the discussion; *Diagnosis and Treatment of Diseases of Accessory Sinuses,* by Dr. Allen Moise, with Drs. Pope Oden and O. B. Hicks to open the discussion.

BEQUESTS TO UNIVERSITIES. The North Carolina Legislature has granted the University of North Carolina $925,000 as a two-year maintenance fund and $1,490,000 for permanent improvements for two years. The College of Agriculture and the College of Veterinary Medicine of Cornell University will receive approximately $1,350,000 from the State as a consequence of the appropriation bill signed by the governor. Tulane University, through its Endowment Fund Campaign, and from other sources interested in its welfare, will receive an amount of over four million dollars when all funds have been collected. Vanderbilt Medical School gets $3,000,000 to be added to the $4,000,000 appropriation in 1919.

THE IBERIA PARISH MEDICAL SOCIETY was recently formed when a meeting was held at Iberia for this purpose, at which the President of the State Medical Society, Dr. Homer Dupuy, of New Orleans, and Dr. F. T. Gouaux, of Lockport, councilor of the third congressional district of the State Society addressed the new organization. The officers elected were Dr. G. J. Sabatier, New Iberia, President, and Dr. W. F. Carstens, Secretary-Treasurer.

LONDON HOSPITAL PRODUCES STERILE SURGICAL CATGUT. Surgical catgut, which it is claimed is perfectly sterile has been tried out for nearly a year at the London Hospital and found to be satisfactory. As this catgut is now produced in much larger quantities that the needs of the hospital demand, it is placed on the market. This catgut is made in the hospital from sheep intestines which have been thoroly cleansed by women and the mesenteric rejected by a worker who slits the gut in three strips, after which the fat and adhesive matter are scraped away. These strips are then thoroly sterilized and twisted on a loom to make the different thicknesses required for surgical work, after which the gut is hardened and packed in lengths of 5 feet in air-tight glass tubes containing an antiseptic.

A NEWLY EQUIPPED MEDICAL SCHOOL has been established at Hanoi, the capital of French Indo-China and at present has 150 students under the direction of Dr. Yersin, the discoverer of the plague bacillus. The five year medical course has been put in effect and following this the students will be expected to spend a year in the Medical School of the University of Paris, at which they will complete their clinical instruction and their laboratory work, together with special courses elective.

THE ARKANSAS STATE MEDICAL SOCIETY held its annual meeting at Hot Springs May 2-5 and elected the following officers for the ensuing year: President, Dr. C. H. Cargile, Bentonville; First Vice President, Dr. Don Smith, Mount Hope; Second Vice President, Dr. A. W. Elton, Newport; Third Vice President, Dr. J. O. Rush, Forrest City; Secretary, Dr. W. R. Bathurst, Little Rock; Treasurer, Dr. Saxton of Little Rock.

THE STATE MEDICAL ASSOCIATION OF TEXAS, at its annual meeting held May 10-12, elected the following officers to serve for the next year: President, Dr. Joseph Becton, Greenville; Vice Presidents, Dr. C. E. Durham, Hico; Dr. W. Meyers, Seguin; and Dr. S. J. Wilson, of Fort Worth; Secretary-Treasurer, Dr. H. Taylor, of Fort Worth.

PERSONALS: The Reverend Arlo Ayres Brown has been elected president of the University of Chattanooga and has accepted the position.

The Staff of the late Dr. E. H. Martin will continue the Martin Clinic with the following personnel: Dr. E. A. Purdum, Dr. W. G. Klugh, Dr. W. F. Porter, Dr. T. S. Lorton, Dr. C. W. Jennings, Dr. W. J. Ford and Dr. C. W. Abel. Their offices are in the Dugan-Stewart Building, Hot Springs, Ark.

Drs. Lucien A. Fortier and Tracy T. Gately announce the opening of their offices in the Whitney Central Building, New Orleans, with a practice limited to radiology.

Dr. Seale Harris, of Birmingham, has been appointed head of the General Gorgas Memorial Commission by President Denny of the University of Alabama.

Dr. J. B. Harney, formerly of Charity Hospital, New Orleans, in the X-ray Department, is now connected with the Providence Infirmary Laboratory, Mobile, Alabama.

Dr. S. C. Lyons, after completion of a two years internship at the Charity Hospital, New Orleans, has gone to Rochester, Minnesota, for research study and work with the Mayo Foundation.

All the recent graduates of the School of Medicine of Tulane University are well placed in intern positions in the large hospitals throughout the country, as well as in some of the smaller hospitals. The Charity Hospital and Touro Infirmary, as well as the Presbyterian Hospital, in New Orleans, each have received their quota from the class of 1921.

Removals: Dr. H. A. Gabert, from New Orleans to Mandeville, La.

Dr. F. R. Gomila, from No. 516 Macheca Building to No. 626 Maison Blanche Building.

Dr. E. G. Calvert, from Monroe to West Monroe, La.

Dr. W. L. Fitzgerald, from No. 1002 Broadway to No. 496 Audubon Street.

Dr. V. L. Sandifer, from Mansfield to Grand Cane, La.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By P. T. TALBOT, M. D., Secy-Treas.

We are just now getting out from the accumulation of work as the result of our Forty-First Annual Meeting, held in New Orleans, April 19, 20 and 21.

From past records the enrollment at this meeting of five-hundred and thirty-six represents the largest attendance at any of our previous meetings. I feel certain that I voice the sentiment of every one in a position to judge, that both from the standpoint of numbers and scientific production this gathering was the best in our history. Certainly from the enthusiasm and interest manifested at this meeting each and every one seemed to enjoy the special opportunities offered.

We regret very much to see the little response, however, to the course of Post-Graduate work offered to its members by the Society. Only twelve of the membership availed themselves of this privilege. Whether the Executive Committee will feel the necessity for such a section of the program at its next meeting is entirely uncertain and will depend upon the interest displayed before the next annual meeting. If our members desire such a course it is up to each to make such a want known to the proper officials. In order that this work be kept up there must be shown a desire for same.

While we therefore feel especially proud of the showing made at our recent meeting we have begun to put the irons in the fire to make the next the equal of, if not better than, the one just completed. As you are no doubt aware this next meeting will be held in the illustrious City of ALEXANDRIA, on April 11, 12 and 13, 1922.

Just a bit of information. Some of our membership may not be acquainted with the fact that the Rapides Parish Medical Society represents one of the strongest component parts of our State Organization and has always, in the past, proven equal to any task undertaken. The Rapides Parish Medical Society has always been prominent in medical work, coming to the front whenever any requests were made upon organized medicine. So, each and every one of us may look forward with unusual interest to having the honor of being entertained by this wide-awake organization. With this unusually attractive location and with all the forces at work that the society can command, we may look forward to a grand time at our next annual meeting. From this you may gather that we are not yet satisfied with what we have done but are determined to do better.

It is indeed a regrettable fact to report that although the State Medical Society, with every influence it could command, under the leadership of our past President, Dr. Homer Dupuy, in co-operation with our House of Delegates and Executive Committee, made an attempt before the Constitutional Convention to have the physician's license tax repealed, an amendment offered with this object in view was tabled.

We would appreciate, very much, some expression from the doctors throughout the State concerning their attitude towards this matter. The Louisiana State Medical Society sent representatives to Baton Rouge; the Councilors throughout the State used their influence with the different individual members of the Constitutional Convention; every official of the State Medical Society, especially our past President, Dr. Homer Dupuy, used every known manner to present fairly the claims of the doctors before the Constitutional Convention, and at a recent meeting of the Executive Committee it was requested that the Secretary-Treasurer canvass every member of the Constitutional Convention, presenting argument for the repeal of the Physician's License Tax—all of this, as you may judge, was of no avail and the members of the Constitutional Convention tabled an amendment without even presenting argument for or against the proposed amendment.

So, another opportunity has been lost, and the only thing left for us is to gather the facts and try to understand why such a defeat occurred,—then we may be able to use this in the future if such an opportunity presents itself.

The Executive Committee of the Louisiana State Medical Society met, May 19, 1921, and transacted the usual routine business, the principal of which was the selecting of the dates of the next annual meeting—April 11th, 12th and 13th, 1922.

At this recent meeting special resolutions of thanks were extended the New Orleans Medical and Surgical Journal for their efforts and co-operation in making the last annual meeting of the Louisiana State Medical Society, such a success.

BOOK REVIEWS AND NOTICES.

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Diagnosis and Treatment of Brain Injuries: By William Sharpe, M. D., Prof. of Neurologic Surgery, New York Polyclinic. Philadelphia and London, J. B. Lippincott Company, 1920.

This book is largely a review and critical study of brain injuries coming under the care and treatment of Dr. Sharpe. In this field he has had an unusually rich experience which qualifies him to write authoritatively on this subject.

The book is divided into three parts. Part 1 deals with recent advances in the diagnosis and treatment of brain injuries. This part contains a clear presentation of the indications and contraindications for operation in cranial injuries. A careful description of the technic of typical operations is given, particularly thorough is the operation of subtemporal decompression. Many important diagnostic points are carefully brought out in the text; he particularly emphasizes the use of the ophthalmoscope and spinal fluid manometer; by these means the trouble is detected early, and the operation should not wait for choked disc but should be guided by the earlier signs, such as dilatation of the veins and blurring of the disc margins, as sufficient evidence of dangerous pressure when taken in conjunction with the spinal fluid manometer determinations.

He emphasizes the point that in deciding whether to operate or not it is not a question of "is there a fracture of the skull, but are there symptoms of a threatening increase of intracranial pressure?"

On some points Sharpe is at variance with the teachings of others gained through war experience, but these are for the most part small details and his experience of 487 adult cases with 155 operations qualifies him to speak with some authority and to entertain a somewhat different view.

Part II deals with acute and chronic brain injuries in adults.

Part III with acute and chronic brain injuries in children and new born.

There are some paragraphs and sentences in which the meaning is not quite clear, due often to the unusual length of the sentences. This should have been corrected by careful editing.

The index while thorough seems clumsy and requires quite a little study before one can find what is wanted. Some illustrations are quite excellent, but there are many which attempt to show the detailed steps of an operation in which little can be made out but a bunch of forceps and a few towels. There is very little in the index to guide one to typical cases of epidural hemorrhage with the classical symptoms. In such a large number of cases one would expect that typical cases would be given more prominence. There is also very little on hydrocephalus and only one slight reference to tuberculous menigitis, though both conditions can follow trauma. Tumors and other diseased conditions are not dealt with as the book is confined exclusively to injuries, but one or two cases are recorded in which tumors complicate brain injuries.

While there are some few things to criticize they are far outweighed by many more to admire and praise. The book should find a large field of usefulness and should be upon the shelves in the libraries of all general surgeons, emergency, industrial and railroad hospitals. ALLEN.

Collected Papers of the Mayo Clinic, Rochester, Minn.: Edited by Mrs. M. H. Mellish. Volume XI. W. B. Saunders Co., Philadelphia and London, 1920.

This volume, which is a collection of papers by the staff of the Mayo Clinic, is quite in keeping with its predecessor both in the quality and variety of the papers presented as well as in the typographical and pictorial excellence. ALLEN.

Diseases of the Nose and Throat, by Hebert Tilley, B. S. (Lond.), F. R. C. S. (Eng.). Paul B. Hoeber, New York, 1920.

Dr. Tilley has added to the list of excellent text-books on diseases of the nose and throat. The present edition contains much new matter that brings his work up to the most recent state of our knowledge on the subject. One of the most striking features of the work is its wealth of good illustrations. These play a very important part in making clear the technic of intranasal surgery, and stamp the work as one of a practical character. The present edition differs from its predecessors in the additions and elaborations of surgical technic. There is a more elaborate description of operations on the frontal sinus, enucleation of the tonsils, and endoscopy. New chapters treat of affections of the trachea, intranasal dacryocystotomy, and the intranasal surgery of pituitary tumors. It happens not infrequently that the success of a fault-less surgical operation is jeopardized by insufficient care in the after-treatment. Dr. Tilley realizes the importance of this subject and gives it all the attention it demands.

It is not necessary to give a summary of the contents of Dr. Tilley's work, for that would be equivalent to giving a synopsis of the entire medical and surgical affections of the nose and throat.

The book is the fruit of over twenty years' work in these branches, by a man who has sifted in his own mind, all that was worth trying in his particular domain. This vast amount of useful knowledge is systematically arranged and set forth in language of unexceptionable clearness and directness. We can safely predict for Dr. Tilley's work continuance of the professional favor which it has so long enjoyed. McSHANE.

The Essentials of Histology, by Sir Edward S. Schafer, F. R. S. Lee & Febiger, Philadelphia and New York, 1920.

This text is a very replete manual for student work and is not intended as a full reference text in histology for which later purpose the author has written "A Text Book for Microscopic Anatomy." It is a concise, practical book well arranged in fifty lessons and has very many good illustrations which are so essential in the study of histology. W. H. HARRIS.

Ziegler's General Pathology, by Douglas Symmers, M. D. Wm. Wood & Co., New York, 1921.

While the continuation of Prof. Ziegler's original text in translated form is praiseworthy, many omissions are in evidence and few if any additions are supplied. While a general alphabetical index is present in the end of the book, no table of contents is given in front. Thinking this might be an error in the printer's construction of the individual book, other copies were examined but none contained a table of contents.

The references to literature that are given are almost entirely those dating previous to 1910 and while valuable, omit many later important pathological observations.

The effect of various pathogenic organisms upon the tissues are briefly described, but little of the general pathological processes or organo-pathology is given while the actual bacteriology is dwelt upon.

The illustrations are flat and of the older form.

W. H. HARRIS.

PUBLICATIONS RECEIVED.

C. V. MOSBY COMPANY, St. Louis

Tuberculosis and How To Combat It, by Francis M. Pottenger, A. M., M. D., LL. D., F. A. C. P.

Physical Diagnosis, by W. D. Rose, M. D., Second Edition.

Practical Chemical Analysis of Blood, by Victor Caryl Meyers, M. A., Ph. D.

F. A. DAVIS COMPANY, Philadelphia.

Operative Surgery, by J. J. McGrath, M. D., F. A. C. S., Sixth edition, revised.

Rational Treatment of Pulmonary Tuberculosis, by Charles Sabourin, M. D.

Eye, Ear, Nose and Throat Nursing, by A. Edward Davis, A. M., M. D., and Beaman Douglas, M. D. Second edition, revised.

The New Pocket Medical Formulary, by William E. Fitch, M. D. Third edition, revised.

Handbook of Electrotherapy, by Burton Baker Grover, M. D.

J. B. LIPPINCOTT COMPANY, Philadelphia & London.

Fractures, by John B. Roberts, A. M., M. D., F. A. C. S., and James A. Kelly, A. M., M. D. Second edition, revised.

The Principles of Immunology, by Howard T. Karsner, M. D., and Enrique E. Ecker, Ph. D.

Gynecology, by Brooke M. Anspach, M. D.

P. BLAKISTON'S SON & COMPANY, Philadelphia.

Radiant Energy and the Ophthalmic Lens, by Frederick Booth.

Compend of Human Physiology, by Albert P. Brubaker, A. M., M. D., Fifteenth edition.

A Manual of Surgery, by Francis T. Stewart, M. D., Fifth edition.

WILLIAM WOOD & COMPANY, New York.

Manson's Tropical Diseases, by Philip H. Manson-Bahr, D. S. O., M. A., M. D. (D. T. M. and H.) Cantab., M. R. C. P. London, Seventh edition.

THE MACMILLAN COMPANY, New York.

Tuberculosis of Children, by Dr. Hans Much, translated by Max Rothschild, M. D.

W. D. SAUNDERS COMPANY, Philadelphia and London.

The Surgical Clinics of North America, February, 1921, Vol. 1, Number 1.

The Medical Clinics of North America, Vol. 4, No. 5, March, 1921.

WASHINGTON GOV'T PRINTING OFFICE, Washington, D. C.

United States Naval Medical Bulletin, Vol. XV., No. 2, April, 1921.

Public Health Reports, Volume 36, Nos. 9, 10, 11, 12, 13.

Birth Statistics for 1919. Fifth Annual Report.

Public Health Reports, Vol. 36, Nos. 14, 15, 16, 17, 18, 19, 20, 21.

MISCELLANEOUS:

The Johns Hopkins Hospital Reports, Vol. 20, Fasciculus 3. The Johns Hopkins Press, Baltimore.

Monographs of the Rockefeller Institute for Medical Research; Studies on Hookworm Infection in Brazil, First Paper, by S. T. Darling, M. D., and W. G. Smillie, M. D., No. 14, February, 1921.

REPRINTS.

De L'Orthopedie Instrumentale, by Dr. Gabriel Bidou.

How to Write a Medical Article, by Walter M. Brickner, M. D., F. A. C. S.

Silver Salvarsan in the Treatment of Syphillis, by Charles M. Walson, Major, M. C., U. S. Army.

On the Responsibility of the General Practitioner in Regard to Cancer, by L. Duncan Bulkley, A. M., M. D.

Silver Salvarsan; A Preliminary Report, by H. Sheridan Baketel, M. D., F. A. C. P.

Les Bases Scientifiques de la Méthode d'Orthopédie Instrumentale, by Docteur Gabriel Bidou.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for May, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	3	2	5
Intermittent Fever (Malarial Cachexia)			
Smallpox	4	1	5
Measles	1		1
Scarlet Fever			
Whooping Cough	3	1	4
Diphtheria and Croup			
Influenza		1	1
Cholera Nostras			
Pyemia and Septicemia	1	1	2
Tuberculosis	31	33	64
Cancer	25	13	38
Rheumatism and Gout	3	2	5
Diabetes	4	1	5
Alcoholism		1	1
Encephalitis and Meningitis	2	4	6
Locomotor Ataxia			
Congestion, Hemorrhage and Softening of Brain	26	11	37
Paralysis	3		3
Convulsions of Infancy			
Other Diseases of Infancy	16	10	26
Tetanus		3	3
Other Nervous Diseases	3	2	5
Heart Diseases	54	25	79
Bronchitis	3	1	4
Pneumonia and Broncho-Pneumonia	22	29	51
Other Respiratory Diseases		2	2
Ulcer of Stomach	1	1	2
Other Diseases of Stomach	3	2	5
Diarrhea, Dysentery and Enteritis	13	9	22
Hernia, Intestinal Obstruction	2	3	5
Cirrhosis of Liver	2	5	7
Other Diseases of the Liver	2	2	4
Simple Peritonitis			
Appendicitis	5	3	8
Bright's Disease	16	11	27
Other Genito-Urinary Diseases	6	7	13
Puerperal Diseases	7	4	11
Senile Debility	2	1	3
Suicide	7		7
Injuries	25	12	37
All Other Causes	37	16	53
Total	332	219	551

Still-born Children—White, 16; colored, 20; total, 36.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death Rate per 1000 per annum for Month—White, 13.74; colored, 23.89; total, 16.53. Non-residents excluded, 13.95.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.
Mean temperature	74.
Total precipitation	1.61 inches

Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL
AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 AUGUST, 1921 No. 2

EDITORIAL.

THE TUBERCULOUS IN GENERAL HOSPITALS.

When the bacillus of tuberculosis was discovered and the infectiousness of the disease was established, the beneficial effects produced by the knowledge gained were somewhat marred by the morbid fear of the disease which took hold of the public, and which extended to some degree to the profession, including the management of general hospitals. It became very difficult to secure lodging and treatment for the afflicted, except in special hospitals and sanatoria, and the general hospitals avoided receiving patients of that class.

As far back as 1916 the National Tuberculosis Association passed resolutions suggesting the opening of wards in general hospitals for the treatment of tuberculous patients. The American Medical Association, at its recent meeting in Boston, recommended such action which has also the endorsement of the United States Public Health Service. The latter believes that this will be of "enormous benefit not only to most of the two million known victims of this disease in the United States, but also to thousands of others in whom the disease is incipient and easily suppressible, if promptly treated."

Here in New Orleans we have been among the progressives, as is so often the case although we do not blow our own horn, for we have had for several years a special department, the Breaux Memorial, in our Charity Hospital, where under the care of experts the tuberculous are received and treated. Only in barely about one-eighth of the general hospitals of the country is the routine treatment of tuberculous patients carried out. It is hoped that the number will now be increased gradually and that wards, porches, roofs, etc., will be utilized to provide space and facilities for the treatment of such patients.

An intelligent and efficient carrying out of the plan would go far towards solving the economic, therapeutic and preventive difficulties of the problem of the tuberculous.

THE CHARITY HOSPITAL BOARD.

Our readers will easily recall our editorial of last month commenting favorably upon the "get together" meeting of the Board of Administrators of the Charity Hospital and the Visiting Staff of said hospital and complimenting the Board upon having taken the initiative, foreseeing better care for the indigent sick and better training for the physicians as a result.

This was being printed and was not yet issued when the Board took action upon a most important matter without a hint to the Staff, without asking its co-operation or advice, and even without informing the Staff that it contemplated taking such action.

This was the appointment of the highest professional official of the hospital, the one coming in closest and most constant contact with the members of the Staff, and it involved a radical change in the financial status of the position. When, if not then, would there be utility or necessity in seeking assistance and advice? This is the question now giving concern to many members of the Staff, including some of the most conservative and the most favorably inclined in their attitude towards the Board.

Let it be understood that as far as we know, and most assuredly as far as we are concerned, there is no feeling of antagonism involved and there is no objection to the appointee personally. He is generally recognized as one of the energetic and intelligent younger men of the medical profession in New Orleans and it can well be that in an election he might have secured a majority vote among the members of the Staff, but, the question will obtrude itself, where are the consultation and the co-operation? Does the Board intend usually to act first, then determine whether its action receives the approval or disapproval of the Staff? Of course it has the authority to follow such a course, but, if it does, it must no longer profess to desire a more intimate relationship and reciprocity with its Visiting Staff.

DR. JOHN B. ELLIOTT, SR.

On June 27, too late in the month to be announced in our last number, Dr. John B. Elliott, Sr., died at his home in Highlands, North Carolina, at the age of seventy-nine.

Although he left us a number of years ago and had practically retired on account of advancing years and failing health, all but the youngest of us remember Dr. Elliott. To remember him is at the same time to esteem him and to cherish him. Especially to those who had the privilege of being taught by him, will his death come as a blow and will it cause sincere grief. In our time Elliott was Professor of Materia Medica and Therapeutics and he was followed with great interest. He was a live, virile, progressive teacher. A fluent speaker, with a voice that carried well, no dull moment made the time lag during the hour allotted to his lecture—no one slept and no one "cut" in order to play "crac-a-loo", which could not be said of all the others.

Professor Elliott aimed essentially at making his students think and reason and he had the gift of imparting knowledge too. When, in the early eighties, he succeeded the lamented Bemiss as Professor of the Practice of Medicine, he was equally successful, equally esteemed and appreciated by his students.

Always one of the most up to date and highly informed members of the faculty of the School of Medicine of the Tulane University of Louisiana and of the medical rrofession of the City of New Orleans, his former colleagues and his numerous students will always think of him with gratitude and will treasure their association with him.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

SAFETY FACTORS IN SUPRA-PUBIC PROSTATECTOMY.*

By DR. A. NELKEN, New Orleans.

Senile hypertrophy of the prostate is a disease of advanced age. The pathological changes which are so commonly present in the kidneys, heart and blood-vessels of old men make it important that the conservative surgeon exercise an unusual degree of caution when undertaking surgical interference in these cases.

All things considered, prostatectomy is comparatively a safe and simple surgical procedure, and good judgment is displayed more in the pre-operative and post-operative care of the patient than in the operation itself. Attention to these factors makes the difference between success and failure. In the hands of careful and competent surgeons, the mortality rate in prostatectomy is remarkably low

Senile hypertrophy of the prostate occurs in men pasty fifty, rarely at an earlier age. The first symptom that attracts the patient's attention is frequency of urination, usually more noticeable at night. Soon he finds that his stream lacks force and urine will sometimes dribble after the completion of the voluntary act. The bladder musculature hypertrophies in its efforts to overcome the obstruction at the vesical neck. As this obstruction increases, the bladder dilates and diverticuli may form between the hypertrophied muscle bundles. A catheter passed after the patient has emptied his bladder as well as he can will show residual urine. Retention of urine is an important indication for surgical interference. Especially is this true in "young" prostatics. Senile hypertrophy of the prostate is a progressive condition. Residual urine will increase in quantity, infection of the bladder, and later, of the kidneys, is almost inevitable, and a train of complications will be induced that is certain to markedly shorten the sufferer's life. A relatively young man with a considerable life expectancy should be advised to submit to a radical operation. An older man, for instance, one past seventy, if his poor phyiscal condition multiplies the risk of operation, may be made fairly comfortable for his few remaining years by other and less radical measures. However, age alone should not be considered as a bar to removal of the prostate. I have on two occasions removed the gland in men past 85 years without unpleasant complications.

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*Read at the meeting of the Louisiana State Medical Society, April 19 to 21, 1921.

Bladder infection with frequency, pain or hemorrhage may make at least supra-pubic drainage essential for the patient's safety or comfort. Bladder stone may make operation imperative. Some patients cannot tolerate an indwelling catheter. Again, it may not be possible, because of the size or nature of the prostatic growth, to pass a catheter without great trauma, hemorrhage or septic reaction. Here, again, supra-pubic drainage is a life-saving measure. The removal of the prostate can be left to later decision.

Functional Capacity of the Kidneys. The ability of the kidneys of the aged to bear the strain that comes with any major operation must give the conscientious surgeon grave concern; and when, to the other conditions that tax the capacity of these organs, is added the damming back of infected urine, then scrupulous attention to some, if not to all of the proven tests for renal function becomes the surgeon's duty before operating. Because of its reliability, combined with its simplicity, the phenolsolphonephthallein test has supplanted the other dye tests of kidney function. Its application is so easy that it is at the command of any physician who possesses a hypodermic syringe and a colorimeter. It should be a routine procedure not only in the study of cases of hypertrophy of the prostate, but in every other pathological condition where information as to the functional capacity of the kidneys may be of value. However, it must not be forgotten that the 'phthalein test is not infallible. Further valuable insight into the renal function can be secured through chemical analysis of the blood. Unfortunately, the wider use of this latter method is prevented by the fact that it is essentially a laboratory procedure. Still, no case of prostatic hypertrophy has been carefully studied preoperatively unless the 'phthalein excretion and the blood chemical findings are apart of the record. Of the blood chemical analyses, probably urea estimation is the most important. This reading, combined with the quantity of 'phthalein excreted, gives us highly important information on which to base our decision as to when to operate and what the prognosis is. It is hardly necessary to add that routine examination of the heart, lungs and blood-vessels should always be done preliminary to operation.

The Two Stage Operation. Supra-pubic prostatectomy has been made considerably safer by the introduction of what is commonly known as "the two stage operation." In my opinion only in rare instances should prostatectomy be completed in one stage. This exception might be a relatively young patient in perfect physical condition and having a sterile urine. Little or nothing is lost by first doing a supra-pubic and, later, when the patient has entirely recuperated, in proceeding with the second and graver step of removing the prostate.

Preliminary drainage of the bladder reduces the risk from sepsis, since it offers one absorbing surface at the time to the infected urine; it relieves retention and thus gives an opportunity to the kidneys to recuperate; and it does not materially lengthen convalescence, since granulation and cicatrization of the supra-pubic wound begins at once and is only slightly disturbed by the subsequent prostatectomy. It has been my experience repeatedly to have a bladder close in ten days to two weeks after prostatectomy where preliminary supra-pubic drainage had been done several weeks before.

Choice of Anesthetic. Any adult bladder can be opened painlessly and safely under local anesthesia. Even extremely obese individuals offer little difficulty and, in easy cases, the opening of the bladder with infiltration anesthesia gives less disturbance than does the passing of a catheter through a difficult prostate. However, I am not one of those who enthuse over local anesthesia for the removal of the prostate gland. The gland can be enucleated under local, but an ideal anesthesia is difficult of attainment and the shock of the operation is often greater than it is with general anesthesia. With the bladder already opened, prostatectomy usually requires but a few minutes. A brief ether anesthesia is not objectionable where the general condition of the patient is good. Gas-oxygen offers a safe and satisfactory anesthesia where rigid arteries and high blood-pressure do not contra-indicate its use. In old men with bad kidneys, bad hearts and bad blood-vessels, it is my opinion that spinal anesthesia is the method of choice. Injection into the spinal canal of one grain of novocain or apothesin gives an entirely satisfactory anesthesia, and, if the semi-upright position and low point of injection are used, little is left to be desired as to the safety or comfort of the patient. The needle is introduced between the third and fourth lumbar vertebrae, with the patient sitting and bent forward. He is not allowed to lie flat after the injection is made, either during the operation or shortly thereafter, but is kept in a semi-upright posture. Anesthesia by this method does not extend as high as the supra-pubic region, and it is necessary additionally to infiltrate the edges of the wound with local.

Hemorrhage. Influenced by the reports of Freyer and his school, for many years most surgeons did not pack after supra-pubic prostatectomy. I have never seen threatening hemorrhage in any case where I did not pack. But it looks like bad surgical practice to leave an open wound anywhere and then to trust to nature to stop bleeding. Such technique is unheard of, save as applied to the prostate cavity, and, today, it is a general practice to use some method of controlling hemorrhage after prostatectomy. Packing with gauze is the simplest of these procedures; the most elaborate is the exposing of the prostatic cavity and the tying off of all bleeding points. The gauze pack, if properly introduced, is efficient in controlling hemorrhage, but the removal of the pack is extremely painful. In the only case of prostatectomy that I have lost from hemorrhage, bleeding occurred shortly after the removal of the pack, 48 hours after the operation, and the patient was beyond help before I could be reached. The use of ligatures in the prostatic cavity requires a much longer bladder incision than is otherwise the case, and unduly prolongs the operation, thus adding to the operative risk. The use of an inflated bag, of which that of Pilcher is the best type, is the method of choice for the control of bleeding after prostatectomy. The bag is drawn into the cavity left by the removal of the prostate and ballooned with air or water. After forty-eight or seventy-two hours, it is collapsed, but still left in position, ready to be again inflated if bleeding should occur. It is removed on the following day.

Catheter in Urethra. Where good nursing is obtainable, it is preferable not to put a catheter into the urethra while waiting for the supra-pubic wound to close. An indwelling catheter greatly increases the probability of epididymitis. Frequent changing of the dressing is preferable to this unpleasant post-operative complication of prostatectomy. A properly adjusted supra-pubic tube will keep the patient comparatively dry and so greatly increase his comfort. Smaller tubes must be used as the wound contracts, until the opening is so small as to forbid the further use of any drain. Complete closure will usually occur in from three to four weeks.

Change of Position. The danger of hypostatic pneumonia in the aged must always be borne in mind. The position of the patient should be changed at frequent intervals and he should be set up in bed as soon as his condition will permit. Some surgeons, in my opinion, go to extremes in this regard and get their patients out of bed before convalescence is sufficiently far advanced to justify the exertion that goes with this procedure. Ordinarily, a back-rest is sufficient for the first week after operation.

These are, I believe, the major considerations that make for safety of supra-pubic prostatectomy. In addition, I strive to impress on the nurse and the interne the importance of keeping these old men dry and keeping them warm. Fluids are given as freely as possible.

We can hardly hope, even with close attention to every detail, to equal the remarkable statistics of operators who report over a hundred prostatectomies without a death, reports that make us marvel not only at the skill, but likewise at the good fortune of the operator. Still, it is possible for us to keep our mortality rate so low that old men suffering with prostatic obstruction will be encouraged early to seek surgical relief. The time of election is while the patient is in good condition, and not when he is breaking both physically and mentally under prolonged suffering. Few operations in surgery are as satisfactory both to the surgeon and the patient as is a well-planned and well-executed prostatectomy.

DISCUSSION.

Dr. S. J. Couvillon, Moreauville: I have certainly enjoyed Dr. Nelken's paper, and I want to say that there is no disease, especially of old age, that gives more trouble to the country practitioner than a real case of enlarged prostate. I was very forcibly impressed with Dr. Nelken's suggestion that these cases should be operated early. I noticed where he mentioned that young men should be operated immediately, and that in old patients we should not hesitate to operate on them as we have done in the past.

In my practice extending over twelve years I have had but three genuine cases of prostatitis, and three of them in old men. The first case was my father, eighty years of age, who was sent to the Touro Infirmary and had the three lobes of his prostate removed thru perineal section, under spinal anesthesia with perfect success. He lived for six years after that operation very comfortably.

The other two patients were over 75 years of age, one of whom was a colored man. They were sent to the Charity Hospital, New Orleans, where supra-pubic incisions were made, and the operations were very successful. They are still living in good health. I would recommend to all country practitioners that where a sanitarium is not available, when they have a case of prostatitis of any consequence, they should send that patient to the nearest city hospital for the complete extirpation of the prostate—the only cure for such cases.

Dr. H. W. E. Walther, New Orleans: The three principal complications following supra-pubic prostatectomy are: hemorrhage shock and uremia. A pre-operative study of our cases including a study of the blood pressure; a phthalein test for excretory power of kidneys; chemical analysis of blood for non-protein nitrogen, urea nitrogen and creatinin to determine degree of toxic retention; and, making reading on blood coagulation-time will aid, to no small degree, in lowering our mortality rate.

Shock usually results from hemorrhage in these cases. Primary surgical shock can be minimized by the employment of local anesthesia, at least, for the initial stages of the operation. By using the Hagner bag and a Hamer anchor, hemorrhage can be completely controlled. Gas-ether-oxygen is the general anesthetic I employ in doing these cases.

Dr. Nelken's point regarding the gauze pack is well taken. Gauze should never be used. Packs of this character are frequently found to stick to the prostatic cavity and when they are dislodged clots are disturbed and secondary hemorrhage results.

Just a word as regards the two-stage operation. It is not necessary to employ the two-stage method for every case. Given a case in excellent physical condition, as demonstrated by our clinical and laboratory studies, suprapubic prostatectomy should be done in one stage. In the very old men however, which make up the big bulk of our cases, with impaired kidney function and bad hearts, undoubtedly the two-stage operation is the only rational one to follow.

Dr. A. Nelken, New Orleans, (closing): Dr. Walther did not listen carefully to the reading of my paper. I did not say that every case required the one-stage or two-stage operation. I laid stress on the point that there were certain cases that could be subjected to operation for the removal of the prostate with safety by adopting the one-stage procedure. Other cases of course will require a two-stage operation.

A STATISTICAL STUDY OF THREE THOUSAND CASES OF MENTAL DISEASES.*

By HENRY DASPIT, M. D., City Hospital for Mental Diseases, New Orleans.

Should the title given for this report create an incorrect impression, I would first say that the presentation of the following data is purely in the light of a preliminary report on three thousand serial cases which have been admitted to the City Hospital for Mental Diseases. There has been at this time no attempt to make an intensive study of the different groups, as it is the intention to take the separate groups and at a future date publish a complete analysis of each psychic type. It is our belief that the figures which are presented offer a better demonstration of conditions as to mental health in our community than would be shown by similar data from the State Hospital. This is most probably true, as only selected cases of mental diseases which are recognized as entirely unsuited for home care reach that institution, while at the City Hospital for Mental Diseases we receive all doubtful cases apprehended by the police (not major criminals), cases transferred from the courts for observation, individuals applying in person, and those whose condition has caused concern to their families. It has been the policy of the hospital to refuse admission to non-residents of New Orleans, irrespective of the manner of their coming and as far as possible to hold at least for a few days non-residents who require care in a psychopathic hospital. This allows us a fair insight into the mental health of the community, being, as we are, the clearing house for the indigent cases of mental disease from this part of the State.

The chief interest in our summaries is from the viewpoint of mental health, presenting as is done the problems as to types of mental disease, classified as to ages when coming under observation, the sex and color and the tendency of the various types of marriage, and thus add to our future burden. The majority of reports from other sources and also in the forms which are recommended by the National Commission present merely the totals as to males and females. Especially in the Southern States, where our problems are in a sense twofold, it is desirable that color be reported as well as sex.

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*Read at the meeting of the Louisiana State Medical Society, New Orleans, April 19 to 21, 1921.

A large proportion of the final diagnoses which are here reported are not those of the primary observation, but have frequently been made in the retrospect. It has been our good fortune to be able to keep in touch with the later developments in many cases which have passed through our hands, and we have unhesitatingly reclassified when indicated and placed them in proper folders.

No attempt is made to compare the percentage of the various types with reports from other parts of the country. These points will be properly considered in later publications.

The traumatic group totals thirteen and requires no special comment at this time. There were two hundred and thirteen senile psychosis. This includes all forms, with the exception of frank involutional melancholia. They are about equally distributed and about fifty per cent are widowed. General Paresis, which shows the largest number of any single group, shows four hundred and forty-three. White males are in proportion of about four to one as to white females. Colored males about two to one as to colored females. More than fifty per cent were married, and, though not shown in our tables, at least eighty per cent of these were married after having acquired syphilis. Quite an eugenic problem, isn't it?

Under the heading of "Cerebral Syphilis," which amount to fifty, are included those cases not paretic in which cerebral lues proved to be the essential factor in the psychosis.

The alcoholic cover all forms of purely alcoholic psychosis; eliminating simple acute alcoholic intoxication, these latter are subdivided under the "Not Insane," as they merit separate consideration. The majority of the definite alcoholic psychoses occurred in early life in the unmarried. Totaled one hundred and forty. Since national prohibition has come, the admission of an alcoholic psychosis is an event.

We saw but twenty-four cases of Pellagrous Psychoses.

The thirty-eight cases included under Somatic diseases offer little material for comment, other than to say that not more than eight could be suspected as coming under consideration as being due to the present neurological diagnostic scapegoat, Epidemic Encephalitis.

Of the total of two hundred and eighty-eight Manic Depressives, one hundred and sixty-three were married. Quite a few had given birth to children after discharge from some hospital care necessitated by a previous episode. Here is more food for thought. Ninety-two males and one hundred and ninety-two females comprised the group.

Involutional Melancholia, carefully eliminating manic depressive association, amounted to one hundred and eighteen. About three females to each male.

Dementia Precox stands second with three hundred and twenty-five. Two hundred and thirteen males, one hundred and twelve females. Only fifty-eight were or had been married.

Paranoia infrequent and the group of Paranoic States amounted to one hundred and thirty-one.

The epileptic psychoses, one hundred and fifty-one. The males predominated, but though in fewer numbers, it was noted that there was a greater proportionate tendency for the females to marry.

Constitutional Psychopathic Inferiority equalling two hundred and twenty-nine, and mental deficiency, two hundred and forty, offer an entirely different problem than the definite psychoses. The large number of these cases seen by us, the comparatively few which reach our State Hospitals which are primarily conducted for handling mental diseases and the menace of these unfortunates to the future mental health of our State, calls for concerted action which will lead to an institution to meet their special needs.

In conclusion, I wish to express my appreciation of the invaluable aid given by Dr. Frederic L. Fenno in checking the histories.

NATIVITY OF FIRST 3000 ADMISSIONS IN CITY HOSPITAL FOR MENTAL DISEASES.

Nativity	W. M.	W. F.	C. M.	C. F.	T.
United States	1127	613	551	339	2730
Africa	----	----	----	----	----
Asia	2	----	----	----	2
Australia	1	----	----	----	1
Austria	9	1	----	----	10
Belgium	3	2	----	----	5
Bohemia	1	----	----	----	1
Canada	6	1	----	----	7
Central America	5	1	2	----	8
China	2	----	----	----	2
Cuba	1	----	1	----	2
Denmark	1	----	----	----	1
England	15	----	----	----	15
Europe	3	----	----	----	3
Finland	----	----	----	----	----
France	19	4	----	----	23
Germany	27	9	----	----	36
Greece	6	----	----	----	6
Hawaii	----	----	----	----	----
Holland	1	----	----	----	1
Hungary	2	1	----	----	3
India	2	1	----	----	3
Ireland	14	5	----	----	19
Italy	38	16	----	----	54
Japan	----	----	----	----	----
Mexico	5	1	1	----	7
Norway	3	1	----	----	4
Philippine Islands	1	----	----	----	1
Poland	4	1	----	----	5
Porto Rico	1	1	----	1	3
Portugal	----	----	----	----	----
Roumania	----	1	----	----	1
Russia	9	4	----	----	13
Scotland	2	1	----	----	3
South America	2	4	----	----	6
Spain	4	----	----	----	4
Sweden	2	1	----	----	3
Switzerland	1	1	----	----	2
Turkey in Asia	----	----	----	----	----
Turkey in Europe	----	----	----	----	----
Wales	1	----	----	----	1
West Indies	2	----	3	----	5
Other countries	2	----	3	----	2
Unascertained	8	1	----	----	9
Total	1332	671	557	440	3000

CITIZENSHIP.

	Males	Females	Total
Citizens by birth	1678	952	2630
Citizens by naturalization	133	150	283
Aliens	71	9	80
Citizenship unascertained	7	0	7
Total	1889	1111	3000

MARITAL CONDITION

	PHYCHOSES	SINGLE					MARRIED					WIDOWED				
		W.M.	W.F.	C.M.	C.F.	Total	W.M.	W.F.	C.M.	C.F.	Total	W.M.	W.F.	C.M.	C.F.	Total
1.	Traumatic	3	....	1	....	4	2	4	1	....	7	1	....	2	....	3
2.	Senile	20	9	8	17	54	10	15	18	10	53	31	25	20	30	106
3.	Cerebral Arteriosclerosis	9	4	7	2	22	13	5	12	8	38	3	5	4	2	14
4.	General Paresis	70	10	19	4	103	138	29	80	34	281	15	16	16	12	59
5.	Cerebral Syphilis	17	4	10	1	32	6	....	5	3	14	2	1	2	....	5
6.	Huntington's Chorea	....	....	....	....	0	1	....	....	....	1	....	....	....	....	0
7.	Brain Tumor	....	....	1	....	1	3	....	1	....	4	....	....	....	....	0
8.	Alcoholic	61	5	10	5	81	21	4	9	3	37	17	1	3	1	22
9.	Drugs. Exogenous Toxins	2	2	....	1	5	4	2	1	1	8	3	1	....	1	5
10.	Pellagra	5	....	3	2	10	1	3	2	6	12	2	....	....	....	2
11.	Other Somatic Diseases	2	3	1	3	9	4	8	2	8	22	2	2	1	2	7
12.	Manic Depressive	34	37	14	33	118	32	47	19	65	163	9	8	6	4	27
13.	Involutional Melancholia	3	11	....	1	15	18	19	3	7	47	5	30	3	8	46
14.	Dementia Praecox	131	50	53	33	267	20	18	5	9	52	4	2	....	....	6
15.	Paranoia. Paranoic States	33	15	13	3	64	27	10	6	5	48	5	8	4	2	19
16.	Epileptic	56	24	35	11	126	5	2	8	8	23	2	1	1	....	4
17.	Psychoneuroses, etc.	1	3	....	1	5	4	6	....	1	11	....	1	....	....	1
18.	Constitutional Inferiority	101	32	17	12	117	25	18	1	3	47	2	6	....	3	11
19.	Mental Deficiency	75	44	49	10	178	10	20	8	18	56	1	4	....	1	6
20.	Undiagnosed	16	8	9	2	34	25	10	12	8	55	7	3	3	2	15
21.	Not Insane	22	21	17	3	63	38	10	2	6	65	8	6	1	1	16
22.	Not Insane (Acute Alcoholism)	101	8	21	3	131	48	16	16	8	88	6	3	2	1	12

SEX AND COLOR.

	PYSCHOSES	W. M.	W. F.	C. M.	C. F.	Total
1.	Traumatic	5	2	4	2	13
2.	Senile	61	49	46	57	213
3.	Cerebral Arteriosclerosis	25	14	23	12	74
4.	General Paresis	223	55	115	50	443
5.	Cerebral Syphilis	25	5	17	3	50
6.	Huntington's Chorea	1	----	----	----	1
7.	Brain Tumor	3	----	2	----	5
8.	Alcoholic	99	10	22	9	140
9.	Drugs. Exogenous Toxins	9	5	1	3	18
10.	Pellagra	8	3	5	8	24
11.	Other Somatic Diseases	8	13	4	13	38
12.	Manic Depressive	65	92	29	102	288
13.	Involutional Melancholia	21	65	6	26	118
14.	Dementia Precox	155	70	58	42	325
15.	Paranoia. Paranoic States	65	33	23	10	131
16.	Epileptic	63	27	44	17	151
17.	Psychoneuroses, etc.	5	10	----	2	17
18.	Constitutional Inferiority	137	56	18	18	229
19.	Mental Deficiency	86	68	57	29	240
20.	Undiagnosed	48	21	24	12	105
21.	Not Insane	68	46	20	10	144
22.	Not Insane (Acute Alcoholism)	155	27	39	12	233
	Total	1332	671	557	440	3000

DISCUSSION.

Dr. L. L. Cazenavette, New Orleans: The paper as read by Dr. Daspit represents in a statistical form the admissions to the City Hospital for Mental Diseases. The 3000 cases upon which this study is based include a considerable proportion of mental disorders that are not considered as cases of insanity in the legal sense. The statistics represents a more accurate picture of the incidence of mental disorder in our community than reports from State Hospitals.

One point strikes us very forcibly, in this table of cases, and that is the large number of men (500 in number) with general paresis. This disease caused by the ravages of the spirochete pallida (syphilis) on the highest grade of tissue in the body may make its appearance and may most frequently be recognized clinically only years after the initial infection. It becomes our duty therefore, in order to diminish the number of paretics, to treat early, treat thoroughly and treat for a long time all cases of syphilis.

Fortunately, all cases of syphilis do not develop paresis. An important point along those lines is brought out by Marie and Levaditi in an article entitled **"La paralysie générale est due à un tréponème distinct de celui de la syphilis banale"** (Abstract in Archives of Neurology and Psychiatry, March, 1921). They recall that the likelihood of the development of general paresis in a case of syphilis is in inverse proportion to the occurrence of peripheral ectodermic reactions. They quote Fournier for the statement that general paresis follows syphilis of benign initial type, and Erb for the citation of an instance in which five men, infected by the same prostitute, all became either paretic or tabetic. After repeated experiments and observations covering a period of years, with the virus of general paresis in rabbits and the initial virus from a chancre they conclude that one virus may be termed the dermotropic virus and the other the neurotropic virus, and believe that the spirochete of general paresis may be considered as a different variety than the spirochete causing cutaneous and visceral syphilis.

This recalls the repeated clinical observation that many tabetics and paretics do not confess having had initial lesions and cutaneous manifestations. This is probably because they were infected with the neurotropic virus which has a special affinity for nervous tissue. It is claimed that those patients presenting marked secondaries and therefore infected with the dermotropic virus escape nerve manifestations while they may show lues of other organs. This leads us to the conclusion that the milder the initial lesion and the lesser the cutaneous eruption the more the chances of nerve syphilis in after years and the more careful we should be in the treatment of these cases.

Another group of cases in Dr. Daspit's report which requires attention is that of the mental deficient. At present many of these are at the City Hospital for Mental Diseases where the surroundings are not the best for these unfortunates. We should have in this State an institution where both male and female feeble minded could be received and properly taken care of.

Dr. J. A. O'Hara, New Orleans: In discussing the paper of Dr. Daspit and following along the lines laid down by Dr. Cazenavette, I will take but a minute to point out the fact that we are sending representatives to the Legislature and to Congress to make laws who do not know what they are talking about. One-half of our representatives in our Legislatures and in Congress are taking a shot at the moon. The United States Government is appropriating twelve millions of dollars for regulating and controlling alcohol, while the amount our government is appropriating for the eradication of specific diseases, known as gonorrhea and syphilis, is comparatively small. In our state there are 450 cases of paresis among the insane, 50 cases of cerebral syphilis, not including the paretics, the mental defectives, the idiots, and imbeciles, and not including a long group of cases that are not stimulated by alcoholics but are built upon a syphilitic tendency. Our government is appropriating seven million dollars for alcohol as against one million dollars for the suppression of cases of syphilis.

The doctors should talk to members of legislatures and members of Congress in regard to enacting laws which will offset and make amends for the amount of damage done to humanity.

Here are white males four to one; here are colored males two to one—all our colored race is inoculated and there is no place to take care of them. The administration is working hard to try to establish an institution to take care of cases of venereal diseases.

I want to call your attention to another matter that is of the utmost importance, and one which should appeal to the laity, namely, according to the report of Dr. Daspit, we have an awful picture of intermarriage of colored epileptics.

EPIDEMIC ENCEPHALITIS.*

By DR. L. V. LOPEZ, New Orleans.

Definition. Epidemic Encephalitis Lethargica, Nona, popularly known as Sleeping Sickness, is an infectious disease affecting the nervous system. Its most conspicuous clinical feature is prolonged somnolence. On this account it was termed Encephalitis Lethargica by Economo. This term is inapt, as somnolence and lethargy may be absent, so the term Epidemic Encephalitis is a more appropriate one. Its four cardinal symptoms are: (1) Ocular palsies; (2) prolonged or hyper-somnolence; (3) elevated temperature; (4) marked asthenia.

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*Read at the meeting of the Louisiana State Medical Society, New Orleans, April 19 to 21, 1921.

History. The first account in the literature of this malady was published by Elias Camorius (1) about 1712-1715. He gave it the name "Schlafkranckheit" owing to the somnolence and pronounced brain symptoms. He stated that the delirium occurred chiefly at night "with mild turbulent phantasies." In 1768, Lepecq de la Cloture (2) described "coma somnolentum" following Grippe.

Czanain in 1835 published a history of epidemic diseases in which he mentions epidemics of "catarrhal fevers" with "soporisite" as having occurred in Germany in 1745, in Lyons in 1800, and in Milan in 1802.

In 1892 Longuet (3) published a review of the literature. During the pandemic of influenza in 1889-90 the complication of Influenza affecting the nervous system was, for the first time, studied systematically and thoroughly. In Europe, as well as in America, numerous observers laid stress on the various phases of nervous system involvement from the neurological (such as palsies, hemiplegias, convulsions, neuralgia, etc.), to the psychic manifestations (stupor, coma, anguish, depression, mania, hallucinations, dementia, confusion of ideas, etc.).

V. Economo (4) in 1917 published a classical account of an outbreak of Encephalitis occurring in Vienna that year. Since then there have been numerous contributions to the literature from observers in this country as well as in Europe.

The disease was observed in Central Europe about 1712-1715 and in 1745. In Lyons in 1800, in Milan in 1802, then again in Europe in 1889-90. It reappeared in Central Europe in 1917. In France, Great Britain and Algeria during the years 1917-18, and in North America during 1918-19. It is still endemic in this country.

Etiology and Pathology. One of the latest contributions to the etiology is that of W. Thalheimer,(5) whose cultural studies confirmed the results of Loewe and Strauss.(6)

It was found by these workers that the infectious agent is a filtrable minute organism which when injected or inoculated into rabbits and monkeys produce typical lesions of Encephalitis. The cultural studies of Levaditi and Harvier, McIntosh and Turnbull, and others, have also confirmed the result of Loewe and Strauss.

The macroscopic or gross pathology is hyperemia of the brain substance, especially the gray matter and the meninges, also hemorrhages. (According to Jaffe.)(7) Microscopically, we find a perivascular infiltration of the smaller and larger vessels, especially in the brain stem, and most marked along the aqueduct, floor of the 4th Ventricle and Medulla. This infiltration is confined to the adventitia and does not invade the brain substance. The cells are chiefly round cells with very little protoplasm and large nuclei rich in chromatin; in type, resembling lymphocytes. The vessels are usually filled with blood, contain no white cells, and do not show changes in the intima with cell infiltration. Plasma cells are rare. The other main finding is Neuroaphagia.

Jaffe states that one *cannot* pathologically differentiate Epidemic encephalitis *from* the hemorrhagic encephalitis *of* Influenza or other forms of toxic infectious encephalitis and that it would be better to use the generic *term* Infectious Encephalitis, appending the name of the exciting cause whether typhoid, pneumonia, Influenza, etc.

Symptomatology and Clinical Course: A. J. Hall(9) in his studies of Encephalitis in England found that 69 per cent of his cases were of gradual onset and 31 per cent. sudden. H. F. Smith, in this country, found, out of 122 cases—87 or 71% gave a history of gradual onset while 35 cases or 29% the onset was sudden. Another important finding was that in the thirty-five cases of sudden onset there were 21 deaths and out of the eighty-seven cases of gradual onsets the number of deaths was 21—giving a 22% fatality for the cases with gradual onset and 60% for sudden onset.

The type of symptoms seen in a given case depends upon the part of the Nervous System affected. If it attacks the thalamus, choreiform movements will result; if the meninges—rigidity occurs; if the spinal nerve roots, pain results; if the cranial muclei, ophthalmoplegia, facial paralysis, etc.

The Cranial Nerve Palsies: The 3rd or Oculomotor nerve is the most commonly affected giving rise to ptosis. This may be single or double, complete or incomplete, constant or transient. Next in frequency may occur palsies of the 4th, 6th or 7th cranial nerves. These ocular paralyses often inaugurate the disease so that ptosis, diplopia or strabismus may present themselves before fever or apathy. Combined palsies is the rule.

Euphoria is a frequent symptom ranking next to cranial nerve palsies according to Hunt.(8)

The majority are without complaint. It is unusual to see a severe illness in which the patient is so little cognizant of his true condition. It is also unusual to find a disease in which the feeling of well being and absence of any distress is so marked and so constant.

There is often some rigidity, but it is variable, irregular in distribution and inconstant. It is dependent upon meningitic involvement. Rigidity of the neck is rare and when present not as marked as in Tubercular Meningitis. There may be slight or marked rigidity in the arms or legs. It may vary from day to day.

Tremors, Spasms and Choreiform Movements. The tremor is coarse and closely resembles that of Paralysis Agitans. In Encephalitis the distribution is chiefly the face and hands. It may appear at the very beginning of the disease or not before the end of the first week or be absent altogether. The choreiform movements resemble Sydenham's Chorea—they are jerky, irregular and often purposeless. They may be general or localized. They are usually general. When localized, the distribution is variable. The tremor may be restricted to the hands or to the muscles—the abdomen or to one-half of the body or to the facial muscles.

Temperature changes: H. F. Smith(10) states temperature was one of the most constant symptoms and it was usually of a low grade. There was fever in all of Hunt's cases. There are cases reported without fever.

The facies of this disease varies with different types—at the beginning or in a mild form the skin may be natural in color or slightly flushed and the ophthalmoplegia or facial palsy alone stamp the disease. Gradually as the case progresses a lack of expression is seen and, finally, the rigid, mask-like, expressionless facies is seen. The facial muscles are drawn-downward, the skin is wax-like and pasty and one or more cranial nerve paralysis distort the features. It closely resembles the facies of Parkinson's disease plus cranial nerve palsies and a pasty, greyish skin.

As ptosis is the most common form of paralysis it is usual to see these patients lying in bed with their eyelids partly closed. Apathy may be present from the very beginning but usually appears about the 2nd week. It may be slight or pronounced or it may be interrupted by an active and busy delirium. The most characteristic attributes of this lethargy are the lack of proportion between the real and the apparent and the ease with which the patient can be roused and then relapse into coma.

Among the eye symptoms you may find—Diplopia, nystagmus, fixed and unequal pupils. Diplopia is most common—about 60% Nystagmus is present in the Paralysis Agitans type. Mental symptoms occur with great frequency varying from a wild delirium to mania. The delirium is of the low, muttering busy type usually inconstant and may subside during the day. The patient chatters and mutters about his work and picks at the bed clothes. In other cases the mental picture closely resembles the Catatonia of Dementia Praecox. They are "shut in" and negativistic.

Sphincter involvement is a late rather than early symptom. When it does occur with high fever and increasing apathy it is a very serious prognostic finding as the case is apt to terminate fatally. Speech disturbances are frequent. The speech is usually thick, difficult to understand, explosive, hesitating, staccato, often high-pitched and chopped off. The pulse is rapid and hurries as the disease advances; it is usually above 100 and may rise to 150.

There are other less common symptoms such as pain, anisocoria, hiccough, Kernig's sign, slight rashes and changes in the patella reflexes. The pain, when present, appears to be the result of a radiculitis. It is sharp, intense and very difficult to relieve, fortunately of short duration.

The clinical course may be conveniently divided into three stages: 1. The prodromal—which may be ushered in with headache, lethargy, giddiness, fatigue, general malaise and disturbance of vision such as diplopia. 2. The acute—with vomiting, fever, paralysis of certain cranial nerves, changes in the tendon reflexes, alterations of speech, marked general weakness, and in the majority of cases, somnolence or stupor of varying intensity. 3. Convalescence—in some cases recovery is complete in ten days or two weeks after disappearence of the acute symptoms, but in a great many cases convalescence is prolonged and is accompanied by changes in the mental state, definite loss of function of certain muscles and obstinate paralysis.

Diagnosis and Prognosis: The diagnosis of Epidemic encephalitis is not always easy. By lumbar puncture it can be differentiated from Tubercular Meningitis and Cerebro-spinal Meningitis. Cerebro-spinal Lues is differentiated by positive spinal fluid Wassermann a marked increase of cells, increased Globulin and either a luetic or paretic curve in the Colloidal Gold test. Typhoid should be differentiated—This is done by the Widal, temperature curve, rose spots and enlarged spleen.

In some cases of paralysis from Encephalitis should bear Diphtheria in mind. The Klebs-Loeffler Bacillus in the throat and history determine this. When the patients are comatose uremia should be ruled out. This is done by the routine urinalysis and by Blood area estimation—also the P. S. T. test. Acute psychoses are distinguished by the persistence of psychotic manifestations, such as maniacal excitement or delirium unaccompanied by somnolence, stupor or fever.

Tilney and Howe(11) in their series of cases made the diagnosis of Cerebral tumor in one out of twenty. They state Epidemic Encephalitis may be differentiated by the absence of optic atrophy, papilledema, vomiting and paroxysmal headache. Hysteria should also be ruled out. It is chiefly recognized by absence of fever, presence of sensory disturbances, contraction of visual fields. The pressure of normal reflexes and the absence of nystagmus, true paralysis or other ocular motor disturbances are significant.

The prognosis should always be guarded. The cranial nerve paralysis, especially the 7th, are slow in recovery, Ophthalmoplegia does not last long but there is a tendency of reappearance some time after recovery has been established, particularly under stress or when the patient becomes fatigued or exhausted.

When convulsive and maniacal symptoms occur, a grave prognosis as regards life should be given. In the ordinary lethargic type the intensity of the somnolence is the governing factor regarding prognosis (according to Tilney). Concerning other types and stages, the literature is very vague.

Treatment: This is purely symptomatic at present and consists of rest in bed, moderate isolation, hydrotherapy for the fever. The French advocate Urotropin 10 grains three times a day.

Like in all infections elimination is an important therapeutic factor. Water by mouth should be pushed to the limit. If this does not prove practicable the continuous Murphy drip is advisable.

Some authors advocate repeated lumbar punctures—10 to 20cc of the fluid being withdrawn every three to five days. For restlessness bromides can be given. For Insomnia, Veronal or Luminal Sodium. For Delirium, Paraldehyde (tablespoonful every 4 hours). In maniacal excitement, the prolonged warm baths. For the tremor, Hyoscin hydrobromate, gr. 1/150, three times a day. All observers lay stress on not allowing the patient to get up too early. For the weakness or asthenia—Tilney and Howe recommend suprarenal residue 5 minims, T. I. D., after each meal. They state it is best administered by mouth in combination with the hypodermic injections of strychnin cocodylate. gr. 1/60, every day either with or without the arseniate of iron.

For the persistent facial paralysis, mild galvanism directly over the facial nerve for 15 minutes three times a week, has been advocated.

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DISCUSSION.

Dr. C. S. Holbrook, New Orleans: For the past two or three years medical journals and the lay press have been calling our attention to lethargic encephalitis. We have been inclined to look upon this disease as unique and not to be expected or found within our state. It is therefore quite opportune that this disease should be discussed within the body of physicians and Dr. Lopez is to be commended for the excellent manner of presenting the subject.

Lethargic encephalitis is right in our community and a large number of cases of this disease are within the state. During the past two years Dr. Van Wart and I have seen approximately 50 cases of so-called sleeping sickness. In this number of cases there has been a mortality of 12 per cent., and we were able in three cases at autopsy to demonstrate the typical lesions that have been well described. Sleeping sickness is a misnomer and nothing has caused more confusion than the coupling of the word "sleeping" with this disease, acute epidemic encephalitis. These cases do not sleep, except a small proportion of them. Lethargy is not present in more than 25 per cent. of the cases.

Numbers of cases are mentally clear throughout the disease. Some are slightly irritated, while others are delirious as in typhoid fever. Again other cases are mildly excited and have hallucinations as in delirium tremens. Still other cases may be acutely excited.

It is an exception to find typical lethargy. This is something that should be warned against because these cases do not follow out the newspaper accounts of prolonged sleep. Fever is present in the early stage of the disease, the temperature ranging from 101 to 103-5 in some cases. After the disease has progressed for a few weeks the temperature is apt not to be above normal. It has been our experience that leukocytosis is almost always present in the early stage, in some cases going up to 25,000 or 30,000 leukocytes. Pain, according to Dr. Lopez, has been rather infrequent. That has not been our experience. Radiating pains in the arms and legs with headache have been present as early symptoms in many cases, and this pain has persisted throughout the course of the disease in a few instances and has been very difficult to control. Meningeal irritation has shown itself in other ways besides pain as by the stiff neck and Kernig sign in a number of cases, and this has gone far in helping us to make a diagnosis. These pains have sometimes persisted throughout the entire course and have not been relieved by morphin. Probably the salicylates give more relief than anything else.

The spinal fluid has helped to rule out other diseases. There have been comparatively few cases in which there has not been some change in the spinal fluid. The cells are usually increased from 10 to over 100, per cubic millimeter. The globulin may be mildly increased, and the Wassermann was always negative. We should be wide awake to this disease and its presence in our communities and if we look for them, we will find more cases of acute encephalitis than we have heretofore realized. It is quite a live subject, cases are being seen constantly, and I think we should look out for them.

Dr. E. McC. Connely, New Orleans: The most striking feature in regard to encephalitis is the great variety of symptoms. That, of course, is due to the fact that no part of the central nervous system seems to be exempt from its ravages. The onset of the disease varies in almost every case. Jones and Raphael have reported a case in which the symptoms of the onset were entirely psychic. In one case they report the man began with an amnesia and developed mental symptoms gradually. He finally manifested typical encephalitis symptoms.

The diagnosis is very difficult. No one seems to have worked out any definite tests that will aid us in making it. As to the spinal fluid as Dr. Holbrook says, the cells vary from a small increase to a large number. In one case reported there were 1500 cells.

The treatment is not at all established, and is principally symptomatic. The prognosis is completely questionable, almost a guess, and no definite method of estimating the outcome has been found.

Taking it all in all, there is a great deal of work yet to be done in regard to the etiology, diagnosis, prognosis and treatment of encephalitis. I think it behooves the general practitioner to keep his eyes open and be on the lookout for these cases.

The name is rather misleading, because a great many cases never show any lethargic signs. On the contrary, some of them suffer from sleeplessness, and in some cases there is a wild delirium. This brings one to the phychiatric symptoms which have been mostly neglected. Very few practitioners seem to lay much stress on mental symptoms, and yet every case at some time in its course displays mental symptoms of greater or lesser intensity. Especially is this true of the cases which become chronic. They show fatigueability, lack of confidence in themselves, and inability to concentrate, these symptoms persisting for months.

In some cases we will have relapses during which the symptoms shown at the onset are reproduced. One case has been reported who had four or five recurrences in the course of several months, and the patient finally recovered.

Dr. D. W. Kelly, Winnfield: This to me is a new disease. The first case of encephalitis I saw two years ago, a patient in consultation with Dr. Stovall at Sikes and we did not know what was the matter with the fellow. We sent him to the New Orleans doctors. He died. He did not do anything but sleep. He was jumping and jerking all the time. He was a violent case and died in three or four days.

I was called out in the country to see another case with another doctor and when I called on a New Orleans doctor and stated the case to him to find out what was the matter with the fellow, he did not hesitate to say it was a case of encephalitis. I began to read up on the disease and found out the cases I had were undoubtedly cases of encephalitis. This second case was not as violent as the first in which Dr. Daspit was called. I was anxious to find out what was the matter with the patient.

I had two cases in succession, and the disease was something I had not seen before. Dr. Daspit recommended in the second case I had lumbar puncture which I did and drew off quite a quantity of spinal fluid. To my great surprise my patient got very much better. I thought he was going to get all right, but I found out a little later, that I had another guess coming. He improved for a while, got up, was able to go about, but had a relapse and got into a kind of chronic condition. He has been in that condition for over a year. Nothing has seemed to do him any good. A few months later I made another lumbar puncture. There was still high pressure. I had the fluid examined with negative result. Since then I have seen two other cases. One case was diagnosed as encephalitis by the attending physicians. This case was one of the lethargic type. I have seen a fourth case which I am sure was lethargic encephalitis. I think the disease is much more frequent than we have previously supposed. This disease up to two years ago I had never seen, and since I have gotten such beautiful results from lumbar puncture in the case in which there was high pressure I believe in the value of lumbar puncture.

Dr. W. J. Otis, New Orleans: I enjoyed the paper of Dr. Lopez very much as well as the remarks of Dr. Holbrook regarding the name of this disease. The term Encephalitis Lethargica has been preempted for another disease, African Trypanosomiasis.

As regards the onset, I think to a large extent the lethargy in some of these cases is due to a lack of sustenance which lowers the physical tone. Along these lines forced feeding of these cases by a tube is beneficial. An essentially liquid diet will relieve the somnolence and toxicosis when we first see and treat these cases. There can be no question that confusion exists as regards diagnosis in the stuperous type of these cases, with dementia precox and exhaustive delirium. The residuum will last for years. I do not think the disease is contagious so far as I could find by consulting the literature. All cases should be reported, however, in the next ten years the number of cases will increase correspondingly.

Dr. A. L. Levin, New Orleans: I would like to ask Dr. Lopez whether he has seen cases of encephalitis with nausea and vomiting. I wish to relate a case which came under my observation on account of nausea and vomiting in a six-year-old child following measles, and after two weeks normal temperature the child was sent to school and five days afterward had a temperature with a slight cough; a few days afterward the child began to complain of severe supraorbital headache.

The eyes were very sensitive to light when I saw the child. The irritation was evidently cerebral in origin. The physical examination was negative. Dr. Blum looked over the eye grounds and found to his astonishment there was edema of the optic nerve in both eyes. The diagnosis was not certain. The case was undoubtedly one of unusual type of encephalitis. There were no lethargic symptoms, but there was a loss of knee reflexes; there was slight rigidity of the neck. The blood and urine were negative. Spinal puncture was practically negative except for a slight increase in the cell count and the neutrophiles. An isolated tubercle may have caused the edema. The child was kept quiet for a month, when the edema gradually disappeared, and the headache, nausea and vomiting stopped.

The child was permitted to walk, and after several weeks had elapsed, again had a spell of nausea and vomiting, and was put to bed, the eye grounds were examined again and it was found that the left optic nerve was slightly edematous. The child was again put at rest and fully recovered.

Was this a case of encephalitis of unusual type, or was there pressure produced by an isolated tubercle somewhere in the brain? The diagnosis was uncertain and I would like to ask Dr. Lopez whether edema of the optic nerve plays an important part in encephalitis.

Dr. J. E. Knighton, Shreveport: I wish to emphasize what has been said, that encephalitis is a more frequent disease than we have been accustomed to believe. I can add nothing to what has been said in a general way about the diagnosis, symptoms and treatment, but I simply want to state that six or seven cases of this disease have come under my observation during the past year.

Dr. L. L. Cazenavette, New Orleans: There is no doubt that difficulty attends the diagnosis of this disease, and the diagnosis can be made only after the elimination of other diseases of the nervous system. That is absolutely necessary.

With regard to the ophthalmoscopic examination in these cases, my idea is that usually it is negative. If that is so, we have in ophthalmoscopic examination a means of eliminating other diseases of the brain.

Another point I believe should be laid stress on is the cerebrospinal fluid findings. There is usually a pleocytosis, and a little increase in the globulin reaction with a negative Wassermann in these cases.

Dr. C. V. Unsworth, New Orleans: I have seen twelve cases of encephalitis lethargica so-called, and my experience has been that it is difficult to make a positive diagnosis of the disease. In the first place, instead of it being a primary disease, I believe it is secondary. It follows some acute infection. Most of the cases I have seen have followed measles and influenza. The history of the case has more to do in making a diagnosis than the clinical findings. I don't think there is anything positive about the spinal fluid.

I have a case under my observation now that, if it were not for the history being that of an alcoholic, would be a typical case of encephalitis lethargica of the psychic form. He has a wet brain on account of an alcoholic history. He runs a temperature of 101-3 and has been sick for two weeks. Furthermore, the more excitable the cases, the more grave the prognosis is. The quiet cases will sometimes get well. I never saw an individual with the excitable form of the disease get well. I saw a case diagnosed measles that, I am sure, was the excitable form of encephalitis lethargica, secondary, and she promptly died after two or three days.

Dr. L. V. Lopez, New Orleans, (closing): It is gratifying to me to see the amount of discussion that my paper has brought forth.

Dr. Holbrook and Dr. Knighton laid stress on the prevalence of the disease which simply means we should be on the lookout for it. Dr. Otis brought out another point, the importance of force feeding these patients for the asthenia. Dr. Connely laid stress on the importance and persistence of mental symptoms in these cases. I had the pleasure of seeing a case with Dr. O'Hara in which this was quite manifest. Dr. Cazenavette brought out a good point by emphasizing the importance of making a diagnosis of this disease by the process of elimination. That is the only way we can reach a positive diagnosis in an infectious disease of this nature.

In answer to Dr. Levin's question, in some cases the ophthalmologic examination has been confusing. At Savenay during the recent world war there were a few cases in which the eye grounds showed some changes. Some cases showed visual disturbance to such an extent that there was edema of the optic nerve and neuritis which was infectious in character, but which cleared up to a certain extent. But we did not follow up the cases very well, due to the fact that the men were transferred back to the United States. There were a few cases of encephalitis in the Army that were puzzling. In France, at first we diagnosed these cases as dementia precox, and manic-depressive psychosis and other psychotic manifestations due to the onset with psychic symptoms.

This is a field that should be worked up from a research standpoint by the neuro-pathologist and the bacteriologist, because some men do not agree as to the etiological factor. Some observers claim it is a secondary disease, and that you cannot differentiate encephalitis lethargica from any infectious encephalitis. We should do our utmost to try and find the cause of the disease. Perhaps through serology there will be found something to prevent the disease, if possible, if not cure it.

SOME OBSERVATIONS AS TO PROGNOSIS IN INSANITY.*

By CHARLES V. UNSWORTH, M. D., House Physician of the Louisiana Retreat, New Orleans.

There are certain general questions always put to the alienist by the friends and relatives of a patient recently affected with insanity, questions having reference to the probable chances of recovery, to which it is more desirable than easy to reply with perfect confidence. Whether the patient will recover his reason soon, or ever, or in how long or short a time, whether removal from home is, or will be, necessary, whether merely to another residence, or to an institution, and to what kind of an institution the patient should be taken are all inquiries ot greatest interest to the relatives, and the answers to which may affect their worldly arrangements. From long experience, when that experience was limited to general practice, I think myself warranted in saying that practitioners have not ordinarily the means of giving satisfactory answers to these inquiries, and that severe disappointment and inconvenience are often the consequence.

Consider on how many circumstances the prognosis itself must depend; for the treatment to be resorted to, and all the consequent arrangements depend on this preliminary. The symptoms actually present, the duration of the condition, the age, the sex, the social state, the predisposition, the hereditary factors, the physical make-up of the patient, the nature of the causes, the slow or sudden development of the effects, and the treatment that has already been instituted—all these must have careful consideration before there can be given a reasonable opinion as to the probability of recovery. When, therefore, I am expected to prognosticate, I demand much preparatory information, some of which is not always to be readily obtained.

With your kind permission I will cite you a few cases observed in the Louisiana Retreat, the largest private institution of its kind in this section of the country. In the female department there are many unfortunate cases in which no hope of recovery exists; cases of idiocy, dependent on congenital defect, and of imbecility, either congenital or resulting from previous maniacal explosions. The same unfavorable opinion may be pronounced in the numerous cases combined with epilepsy, and with paralysis. Congenital defects are incurable; but the defect may permit partial mental manifestations, and the regulation of these, and the cultivation even of the fragments of the mind in these cases, will materially modify the character and life of the individual.

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*Read at the meeting of the Louisiana State Medical Society, New Orleans, April 19 to 21, 1921.

Imbecile and even idiotic children are capable of being educated to a certain extent, and may be made happier, better, healthier, and longer-lived, by culture. This limited hope, therefore, may be held out in these unfortunate cases. There are cases in which mental disturbance has been caused by short maniacal attacks; and yet in which a recovery of tranquility, of comfort, and a capability of enjoying ordinary life, are quite within the limit of probability, although the chances of these may be diminished by excitement and injudicious treatment.

When, in an epileptic young person, you find that there is much mental eccentricity, or even frequent and great mental excitement, the prognosis is unfavorable; increase of excitement to mania, or imbecility gradually overshadowing the intellect, are what you have to expect. When mental peculiarities have appeared in persons of middle age, if you find the lips and tongue tremulous when the patient speaks, and the mind exhilarated, there is every reason to believe that paralysis has commenced in a most hopeless form. Then again, there are cases of epilepsy, combined with insanity, in which the patient is very rational in the intervals between the epileptic seizures, and when the intervals are lengthy, a state of mind is regained which very nearly, if not entirely, amounts to mental soundness; and this possibility must of course, influence your treatment of the individual. The exposure of such patients in a general insane asylum to the continual society of idiots and the hopelessly insane is without excuse. Their neglect in such institutions is extreme; their minds are uncultivated; they are taught no useful art; and their whole physical and moral nature passes through much suffering into the lowest depths of degradation. There are cases of general paralysis in which the mental faculties have not yet suffered severely; and a proper treatment may long retard further deterioration. At least, that has been my experience in the Louisiana Retreat. Some degree of freedom may consequently be accorded in these cases, but it must be borne in mind that intelligence and life are always in jeopardy.

The symptoms of an acute maniacal attack are less unpromising than those of a quieter form of mania, with delusions, when both are recent. In a larger proportion of incurable cases, remarkable delusions have been long entertained, and the patients are ordinarily quiet. Recurrent attacks of maniacal excitement, however quiet the patient may be in the intervals, are very unfavorable. A most interesting case at present under observation is that of a woman about forty-five years of age, stout, good-looking, neat dresser, and of great respectability; her manners are composed and gracious, and she is occupied in the fancy work department. Within the last week she became restless, irritable and talked much of being quite well and fit to leave the Retreat. These are always, as in this particular case, the incipient symptoms of relapse. The following week sees her untidy in her dress, her hair uncombed and hanging about her face, and her language violent and obscene. In a few weeks she is herself again; when better she is intelligent; and she will remain so well, even for months, that one might again and again be tempted to hope for permanent recovery. But she has been insane for many years, and will always be the subject of these recurrent attacks of excitement.

However, very violent symptoms are not always of unfavorable omen. The most favorable cases are those in which there is simple excitement of all the faculties, resembling the excitement produced by alcohol; these characterized by inactivity and depression are less hopeful. Even cases of melancholia are more hopeful than those in which mere dullness prevails.

In young persons, and most frequently, I think, in young women, short maniacal attacks, unfortunately, often terminate in imbecility, which, although sometimes recovered from, too frequently passes into an incurable form, and after several interruptions of slight excitement, ends in dementia. Dementia, properly so-called, is never recovered from; all the faculties are obscured, there is neither excitement or depression, but a negative condition in which the intellect, the feelings, the propensities, and even the senses have very little exercise; and the patients live for years without seeming to do anything from the prompting of their own will.

A great number of patients recover, probably, from melancholia, as from mania; but in both maladies, successive attacks, longer than the first attack, and coming on at later and later periods of life, are less and less easily recovered from. Melancholia supervenes in some patients after every maniacal attack and precedes recovery; but the end is a gradual advance to imbecility. At all events the prognosis in melancholia is very bad.

The prognosis of insanity following childbirth is generally favorable; recovery takes place in a considerable proportion of such cases within six months after the commencement of the attack, and in many more within a year. Those cases in which the symptoms come on very soon after delivery I commonly regard as more dangerous to life than the cases in which they appear later, or during nursing, and in which we have often only to contend with debility. It does not seem by any means to follow that a woman who has become insane after one delivery will again become so in subsequent confinements, or that she will ever become insane again; and I do not think that, generally speaking, women who have become so affected in the puerperal state are particularly liable to become insane from causes entirely unconnected with that condition. Puerperal insanity may certainly occur after the birth of the first child, and never afterward; or it may occur for the first and only time after the birth of the second child, or third, or fourth. In some cases of insanity ascribed to the puerperal state it will be found on careful inquiry, that slight symptoms had been observed for some months before confinement, and even before a particular pregnancy, and that the puerperal state has merely aggravated the symptoms.

Cases of paranoia are always incurable. Only where a single and marked delusion depends upon any manifest bodily disorder, an indication for cure may be pursued and a certain hope of recovery entertained. If there is much plethora present, or marked debility, or manifest gastric or uterine disorder, a hope may be entertained that the alleviation of such conditions may remove the delusion.

That form of delusion very incidental to persons in the decline of life, and commonly a part of senile insanity is practically hopeless. Ideas of irretrievable ruin or disgrace, or of the impropriety of eating and drinking, or unhappy delusions respecting the identity of those about them, form the frequent afflictions of many institutional patients; and from these very little hope of relief can be entertained.

Whether the symptoms of insanity have come on gradually a long course of eccentricity, or peculiar changes in or exaggerations of the habits and manners of the patient, having been noticed for a year or two before the malady has declared itself, I have never found the case to be curable, even in patients free from paralysis, and apparently of good constitution. Temporary changes of the propensities and general habits may take place to a great extent in a recent case of insanity, without lessening the prospect of amendment. Great perversions of the affections may also exist and pass away. Of these aversion to the nearest friends and relatives is the most common. The dislike conceived by the patients for those who were not known to them before is usually founded on some resemblance, real or imaginary, or on an absolute illusion of the senses; and this will disappear when convalescence is being established. But generally, the patient conceives an aversion for his parents, or for some relative to whom in his sane state he is particularly attached. In recurrent cases, the aversion and the reconciliation succeed one another in the most curious manner; the same patients who one day accost you in terms of unbounded friendship and confidence, assailing you on the next day in the most violent and threatening language, and accusing you of torturing or poisoning them. These frequent and violent alternations belong to cases which are chronic and incurable.

After a certain duration of mania or melancholia, if incoherence of language and thoughts is perceived, recovery, I fear, seldom or never takes place. The incoherence often observed in recent cases is a different condition, and generally temporary in its nature; but if very great, or if continuing very long, it is a sign that the case is doomed to permanent insanity.

Many other symptoms incidental to recent cases, and in them only temporary, also supervene in chronic cases, in which they indicate a great change for the worse. Inattention to personal cleanliness is one of these. It occurs in some recent cases, and is recovered from. It occurs in each attack of some recurrent and curable cases, and passes off with the attack, and wholly disappears when the state of mind is finally recovered; but if it comes on in a case of long continuance, it is always an unfavorable symptom. Another and more trifling peculiarity, that of crouching on the ground, is chiefly seen in old cases; the patients cannot be persuaded to sit upon a chair; they sit on the ground or on benches, with their knees drawn up to their chin; and all such patients are commonly in an incurable state. They are almost always very feeble, and probably instinctively adopt the crouching position, for support and relief. A disposition to sit alone in the corners of rooms, or at the ends of galleries, or behind the doors, and a dislike to the smallest exertion, are unpromising indications in cases where there has been maniacal excitement. In the greater number of recent cases, the patient is too much excited to be employed, or is too full of some immediate discontent; these symptoms will pass away, and a wish to be employed will spring up among the first appearances of amendment.

A return to natural sleep, in a recent case of insanity, affords a hope of probable recovery. Many of my chronic and incurable patients generally sleep well, although some are, apparently, always restless at night. A want of sleep is often to be attributed, in chronic cases, to a lack of exercise during the day. In recent and curable attacks, the sleep is seldom good for some time; and sleep artificially induced is often followed by increased irritability.

In either recent or chronic cases, it is not a promising thing to find the patient becoming stout without any mental improvement being at the same time observed.

Phthisical symptoms, jaundice, dropsy, irregular action of the heart, are all unfavorable combinations, some time obviously threatening life; and I think it is a rare circumstance to find the supervention of these maladies, or their distinct recognition, (for in insane persons they frequently supervene long before they are distinctly recognized) followed by a mitigation of the mental disease. Insanity occurring in a number of phthisical family is generally, I fear, connected with a constitution incapable of recovery. Mental disorders also sometimes depend on bodily disease, of which the origin has not been noticed or recorded, and the future progress is masked, and yet which renders the disorder of the mind chronic, and is undermining the patient's life.

Insanity from religious impressions is seldom cured, or the insanity which assumes a fanatical character, although religious emotions did not cause the disease.

Although hereditary insanity is often recovered from, there is always an unhappy tendency to relapse.

Whilst I confess that experience has taught me to doubt the curability of the majority of cases of insanity, it has also shown me examples of unexpected recovery. My observations on relapse are restricted. Indeed, I scarcely know of any statistics of relapse that can be considered correct.

DISCUSSION.

Dr. Henry Daspit, New Orleans: There is nothing so difficult as to foretell in mental diseases. As far as the duration of mental diseases is concerned, I am particularly guarded, because we cannot determine or state how long they will last when it comes to cure. I consider the conditions before and after treatment and base the recoverability of a patient on whether he is able to regain his position in society without limitation. There are a number of psychotic pictures in which certain definite limitations are established, as the precox group, etc.

So far as manic-depressive insanity is concerned, too many institutions discharge these cases as cured. We don't cure them. We improve them. We see many cases of manic-depressive insanity reported as cured who, on returning to the old environment and conditions, become subsequent psychotics. That should be remembered. Naturally freedom in lucid interval is permissable.

In the psychogenic groups a large number of cases develop some mental aberration as the result of conflict. When you put them into institutions they are cared for nicely and get along very well, but when they are sent back home and have the same conflicts to contend with, in which their mental trouble originated, their psychosis is removed.

For this class of people we should have social service of a character which will guard them against these conflicts and things that predominate in the psychosis. It is all right to put them in institutions but they cannot be kept there indefinitely, and something should be done to improve the social and living conditions of these people at home. Many patients are returned to institutions because there is no social service to obviate these faults.

So far as the feeble-minded group is concerned, they are institutional cases. As to the puerperal group, so far as the prognosis is concerned, I find much depends on whether it is purely a toxic condition following the puerperal state or delivery or the final exciting cause acting on a constitutional psychopatic defect in that patient.

I don't believe the paranoiac is ever cured. We see these paranoiacs drop into a routine, leaving their beliefs, their delusional concepts, sink into the background. They will deny the delusional picture, or after routine living in an institution where they have little worry, they will forget them. On returning to civil life they soon present again the same picture.

As to general paresis. I am a pessimist so far as general paresis of the insane is concerned. We are all familiar with creditable reports in the literature of paresis being cured. But I don't believe any case that has become frank in its demonstration is ever cured. I don't care what treatment we employ. A large group of patients reported as paretic who get antiluetic treatment and recover are cases of the active cerebral type which show a paretic syndrome, and these cases will respond to treatment. Some practitioners try to pin a definite prognosis on these cases, making it limited, but we can never tell how a patient is going to be reconstructed and take his proper place in the living scheme of life.

Dr. L. V. Lopez, New Orleans: The importance of social adjustment by the individual is very important. We see a great many psychotic individuals whose clinical manifestations apparently may subside from the standpoint of behavior, and we say they are cured clinically, but the important point is, when they are sent back to their former environment, can they meet the problems of life in an adequate way? In other words, we should be able to individualize as much as possible and not try to pigeon-hole any psychotic individual into any group or classification. We should look upon the psychotic as being a biological unit and try as much as possible to find out the reason why he reacts in an abnormal way, whether from the standpoint of behavior, the standpoint of thought, or the standpoint of emotions, and try to rectify as much as possible his abnormal way of looking at life and regulate his life in such a way that he will be able to return to his level, and not to any set or ideal level we may have in mind. It is much more difficult to do this than to talk about it, but that is the ideal goal most of us who are doing this work are striving for. I look upon the individual as a biologic unit, and it does not make much difference what name we give to him. A great many cases of dementia precox are called such for want of a better name.

We find cases of precox, presenting all the symptoms according to the diseased entity, who return to their biologic level and become fairly useful citizens. The keynote in the prognosis of the psychotic individual is to try and find his social level.

Dr. E. M. Connely, New Orleans: I wish to agree with Dr. Daspit in regard to his ideas of dementia precox and general paresis; but I do not agree with him in regard to manic-depressive insanity cases. It is true manics recover and have recurrences in a short time, and no one can tell how soon a recurrence will come. In the interval between attacks the manic is a useful citizen. He is bright and keen and goes about his work as the average normal man would do. I remember one case I saw while at Bellevue Hospital, New York, with a definite history of manic attacks forty years before. That man had forty years of a useful life between the first and second attack.

I think Dr. Lopez brought out a good point in regard to the prognosis. A great many cases we diagnose as precox, concerning whom an unfavorable prognosis is given, are not cases of precox at all. In my work with soldiers I have seen a number of cases who were discharged from the army as dementia precox cases and who are useful citizens today, but they were not instances of dementia precox at all. Their condition was either due to some toxic state from influenza, or to something else, or to a mixed infection, or to manic-depressive insanity. Our diagnosis of precox is made entirely on the hallucinosis.

Dr. W. J. Otis, New Orleans: Speaking from a neuro-psychiatric standpoint the keynote of this Section has been mental hygiene, yet up to a certain time mental hygiene was relegated to the background in this state and mostly in all southern states. Louisiana is far behind in taking care of its dependents, and only along the line of mental hygiene will come progress. There are a number of mental and social defectives, for whom nothing has been done. These are sent to institutions, and the families expect the doctors to work miracles upon them. It is hard to tell the families that nothing can be done.

As regards manic-depressive insanity cases, I would transpose the terminology and use the word recovery. To say cure as applied to these cases is a rash thing, because we do not know the environment these people are returning to. They have been well disciplined in these institutions; their morale has been improved, but they return back home where it may be hell for some of them. They have their recurrences; manic-depressive cases recover more than the other psychoses and are self-sustaining citizens to every extent, while the precox cases are not.

Epileptics should be in colonies and should not be allowed to propagate. The prognosis there we know is disastrous.

Again, it is gratifying to see so much discussion along the line of mental hygiene. It is up to you, ladies and gentlemen, when you go back to your towns, to do all you can to legislate along these lines.

THE USE OF NITROUS OXIDE, OXYGEN ANALGESIA AND ANESTHESIA IN OBSTETRICS.*

By DR. T. B. SELLERS. New Orleans.

Nitrous oxide and oxygen were recommended and used by Paul Bert in 1878. Klikowitsch of Petrograd in 1883 reported 25 cases where laughing gas was used successfully. It has gradually gained in popularity up to the present time. Of course, Klikowitsch & Winkle working with crude and inadequate apparatus, and impure gas were retarded in their work. This is the reason nitrous oxide-oxygen analgesia and anesthesia did not advance very rapidly during the first ten years of its use.

At that time they probably did not differentiate between analgesia and anesthesia. Occasionally nitrous oxide-oxygen was given to the stage of asphyxia.

A great deal of work was done to perfect a machine that would be satisfactory and safe. In 1910 Guedel began the routine use of nitrous oxide-oxygen analgesia and anesthesia in normal and operative obstetrics. In 1912 Guedel presented his apparatus for self administration of nitrous oxide and oxygen in obstetrics, a modification of which we are now using.

We are often asked why is it more essential to use analgesia and anesthesia in obstetrics now than in olden times? Civilization with its artificial life and dress has rendered women more or less hot house products and physically less fit to perpetuate the race. Many women have easy and almost painless child birth, but most of them have long, painful and very difficult labor, if not aided by the accoucheur. The time has come when women are demanding relief of pain during labor, and justly they should. Why should women suffer during labor without some attempt to relieve their pain? We do not permit our surgical patients to suffer after operations, on account of shock. Then we must not lose sight of the fact that pain during labor causes shock.

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*Read before the Orleans Parish Medical Society, May 23rd, 1921.

Some may say that with all of our analgesia, anesthesia, asepsis, etc., our maternal mortality is still very high. This is not due to the anesthestic agent but probably to its misuse. For example, undue traumatism while under the anesthetic from dilating the cervix, application of forceps or turning the child in-utero is probably one of the causes of the high mortality rather than the anesthetic. Before the use of anesthesia any of the above operations were undertaken as the last resort and with great care, realizing that the patient could not stand a great deal of manipulation.

If we would look just one minute at our maternal mortality, I am sure it would arouse a great interest on the part of all physicians doing obstetrics to find the cause and try to prevent it.

My object tonight is to bring before the society the use of nitrous oxide-oxygen analgesia and anesthesia, hoping it will be the means of stimulating interest in lowering mortality. We can not hope to get an ideal anesthetic that will be suitable for all cases as the qualifications are many:

1. The anesthetic should not have any ill effect either immediate or remotely on the mother or child.
2. Should render true physical relief from suffering and applicable over a long period of time without any influence on the uterine contraction.

Economical and simple in its use.

Considering the above qualifications, nitrous oxide-oxygen is probably the most nearly adapted to the fulfillment of these qualifications. It is needless for me to say that before the accoucheur or the anesthetist uses nitrous oxide-oxygen analgesia or anesthesia he should be thoroughly grounded in the technic of its administration. A little knowledge in the art and science of anesthesia is very dangerous.

I will give you a few reasons why nitrous oxide and oxygen comes near being an ideal agent for the relief of pain in labor: It is inhaled like air. Is practically odorless. Almost instantaneous in its action on the patient. Is eliminated so quickly that the gas has left the body by the time the next pain is due. Can be used for every pain, so that at any time during labor when suffering occurs a greater dosage of analgesic can be instantly administered, or with less pain it can be reduced at once.

The flexibility of nitrous oxide-oxygen analgesia distinguishes it from Twilight Sleep, for when you once give morphin and hyoscin it is impossible to stop its action, while with nitrous oxide-oxygen the minute you remove the mask the patient rapidly throws off the gas. (Inasmuch as it is an aqueous solution.)

Chloroform and ether are the closest approach to nitrous oxide-oxygen analgesia and anesthesia, but they are not eliminated as quickly, therefore, after they have been administered for a period of three to five hours off and on, the patient gets more or less saturated and all traces of it will not disappear for many hours. We must not forget the effect of chloroform on the liver. It causes fatty degeneration and hemorrhagic tendencies and central necrosis of the liver lobules, also reduces the hemoglobin and pigment but it gradually returns to normal in about one hundred hours. When given over a period of time it also weakens uterine contractions and slows their onset, causing post-partum hemorrhages.

Pituitrin in small doses has been recommended to offset this condition but it is not entirely satisfactory. Chloroform also causes an abrupt fall in the blood pressure (both pulse pressure and diastolic pressure as well). Ether is much safer than chloroform but produces many of the toxic and clinical symptoms on both mother and child.

There is no good reason for using such anesthetics when we have one that will not weaken the uterine contractions but will actually stimulate them and does not produce the pathological changes that chloroform and ether does. Hyoscin and morphin and nitrous oxide-oxygen combinations differ widely from chloroform although it is a mistake that nitrous oxide-oxygen will increase the blood pressure. Nitrous oxide-oxygen does not interfere with the blood pressure for a period of two hours of continuous administration. After 2 hours it will lower the blood pressure, but as soon as it is discontinued the blood pressure rapidly returns to normal.

H. C. Davis, of Milwaukee, has done a great deal of work in trying to place obstetrical analgesia and anesthesia on a scientific and clinical basis of safety and efficiency. He found that chloroform was probably the most dangerous, ether next and nitrous oxide-oxygen the least.

Burges's research has received clinical corroboration in the records of Morris H. Clark of Kansas City in the reduction in the incidence of icterus neonatorum in babies under nitrous oxide-oxygen analgesia and anesthesia.

It is well known that patients with a low alkaline reserve stand operation poorly and may pass from anesthesia into coma and die.

Doctors Crile and Lower of Cleveland feel nitrous oxide-oxygen analgesia and anesthesia is less likely to increase acidosis or shock than either chloroform or ether. The same is true during labor and operative obstetrics showing symptoms of shock or acidosis or exsanguinated by hemorrhage. They should be given the protection of nitrous oxide oxygen analgesia and anesthesia.

Morphin is a great factor in making nitrous oxide and oxygen more efficient. In my maternity work I use ⅛ grain of morphin and repeat in 4 hours without any ill effect, but it must be given during the latter part of the first stage of labor or the first part of the second stage on account of its effect on the respiratory center of the baby when given just before the baby is born. The reason that nitrous oxide and oxygen has grown in popularity in the last ten years is as follows:

1. A short second stage of labor that is practically painless McKesson claims that it will shorten the second stage in primiparæ on an average of three hours). 2. Complete relaxation of the soft parts which minimize the danger of laceration. 3. Absence of restlessness and rigidity in most cases. 4. The absence of exhaustion. 5. The rapid return to normal after analgesia. 6. Better babies. Any unhappy end results are usually the fault of unskilled use.

There are a few salient points that must be followed most rigidly to obtain the best results from nitrous oxide-oxygen analgesia.

1. The patient should be assured that when the pain becomes severe it can be relieved; this tends to remove fear and lessen the possibility of hysteria; the fearful, neurotic or hysterical can not be handled under intermittent analgesia, but a continuous analgesia must be administered.

2. When first administered give enough nitrous oxide-oxygen to produce a deep analgesia or a light anesthesia. This will give the patient confidence in its ability to relieve pain. In primiparæ they sometimes feel that the analgesia is not helping them. You can let them have one or two pains without the analgesia and they will be more convinced of its ability to give relief, this will assure their co-operation.

3. Determine the number of inhalations necessary to relieve pain without producing a light anesthesia and to increase it if necessary.

4. The patient must start inhalations with the first suggestion of approaching pain so she will get enough nitrous oxide-oxygen to relieve the pain instead of breathing during uterine contraction. It usually takes from 2 to 4 deep inhalations before the patient gets enough to relieve the pain. It is essential to hold the last breath and utilize the pain. At first the patient may not see why you insist on starting early but if they wait until the pain starts and they do not get relief it will be self explanatory. The efficiency of nitrous oxide-oxygen is in ratio to the intelligence of the patient to a certain point. Self administration gives the child-bearing woman something to distract her attention from herself and it is entirely safe and without danger of untoward accidents. I have used it for the past year with very satisfactory results. I will not go into the mechanism of the self-administering apparatus at this time. There must be a thorough understanding between the patient and accoucheur so she will do what she is told. I advise them what to do between the pains, that is whether to bear down or not depending on the condition of the perineum. We must not forget that we cannot tell much about the progress of labor by the patient's complaint, therefore, it necessitates an occasional rectal examination. Some think that it will cause blue babies,

this has not been true in my experience. After a rather prolonged nitrous oxide anesthetic it is wise to let the mother take 15 to 20 inhalations of oxygen before the cord stops pulsating.

CONCLUSION.

1. Nitrous oxide analgesia is an almost ideal anesthetic agent in obstetrics. Specific for pain in most cases and shortens duration of labor.

2. Nitrous oxide and oxygen anesthesia is an ideal anesthetic for operative obstetrics—if you have a competent anesthetist to administer it, other than the rare exceptions, as certain heart lesions, etc.

3. Ether is the next best analgesic and anesthetic and a safer anesthetic in an inexperienced hand.

4. Chloroform and Twilight Sleep should not be used.

DISCUSSION.

Dr. A. M. Caine: Dr. Sellers mentioned getting complete relaxation of the soft parts under nitrous oxide. It does not relax except under deep anesthesia, and, under the same conditions, it does stop pains. After this period of general anesthesia the patient comes out and the pains are stronger than ever. The self administration of analgesia is easy in normal cases. It is not difficult to get analgesia but one must have perfect co-operation of the patient.

I have in mind a patient aged 35, primipara, where I had complete intermittent analgesia for a period lasting four hours and this was due entirely to the perfect co-operation of the patient. To my mind ether does not compare with nitrous oxide, as regards the safety of the mother and infant. There is really no danger as the patient is told when to start and when to stop the inhalation. She takes two or three breaths and is off. Ether affects the infant as well as the mother. In nitrous oxide the baby gets very little because of the rapid elimination of the drug, due to the fact that there is little intermingling of bloods, while the gas is at its height in mother's circulation because at that time the uterus is firmly contracted, whereas in ether elimination is slow and infant is frequently influenced.

Dr. F. W. Parham recalled a meeting of the Parish Medical Society some years ago which was held then on Saturday night. The subject of discussion was a paper of Dr. Miles on the comparative safety of chloroform and ether as an anesthetic. A leading surgeon of the city remarked in the discussion he did not see any use worrying so about the danger of chloroform as Dr. Hunter McGuire had reported that in 40,000 cases of chloroform anesthesia not a single death had occurred. On Monday morning following Dr. Parham walked into the amphitheatre of the Charity Hospital and saw this gentleman endeavoring to resuscitate a patient on the table from chloroform anesthesia, in which attempt he failed. This shows the uncertainty of such statistics. Dr. Parham said he saw four cases die in one winter from chloroform, some of them dying before the operator reached the operating table from the wash room. When chloroform kills it kills so rapidly that nothing can be done and that is the trouble also with nitrous oxide gas, but Dr. Parham believed that with the self administration apparatus there is not so great danger of overdose and of death by asphyxia which leads in some cases to a ventricular fibrillation producing instantaneous death.

Dr. Baldwin, of Columbus, Ohio, says that nitrous oxide-ether has been practically eliminated on account of the great danger. Chloroform is the most comfortable, but is really the most dangerous and we never know when danger may occur.

Then again the remote danger of chloroform is very serious because sometimes liver necrosis results.

Dr. Alphonse Guerin spoke some years ago about holding the nostrils so that the vapor should not pass through the nasal passages and some one else suggested cocainizing of the nares in order to prevent the reflex inhibition of the heart by the chloroform passing over the termination of the nasal nerves.

In reply to Dr. Halsey concerning what Dr. Halsey said about the small dose being so dangerous, Dr. Parham remarked that he didn't consider the small dose the source of danger, but the beginning dose.

Dr. Halsey: I think the experimental observations and clinical deductions of Levy show it is the small dose of chloroform, not the large one which is the most harmful to the heart. In animals he has been able to show that small doses of chloroform so affect the ventricular muscle that it can be readily caused to fibrillate. He and many others have reported many cases of death under light chloroform anesthesia which bring strong clinical corroboration of his experimental observations and the deductions therefrom. Now in obstetrics chloroform is usually used in very small amounts, i. e., in just the dosage which, if Levy's views are correct, is the most dangerous.

Dr. E. A. Ficklen: I have listened with keen interest to Dr. Sellers' paper, and regret that he has not demonstrated the apparatus tonight. It is generally recognized that the administration of nitrous oxide during labor is almost an ideal method of abolishing pain. However, I do not think that self administration will be efficient in all cases. The factor of the patient's personality must be taken into consideration. If possible, the presence of an anesthetist is certainly to be desired, in order that anesthesia may be induced and prolonged if the application of forceps or other painful manipulations become necessary, or if the patient is so restless and agitated that self administration is impossible.

While chloroform has well known dangers, I do not think it should be utterly condemned. Fortunately, as Dr. Gwathmey pointed out, the dangers are less in a warm climate. It has been a boon to many mothers. I am familiar with the fatal results that have caused its virtual abandonment in the Charity Hospital but I still believe that its use with proper precautions will save a great deal of suffering, without disproportionate hazard.

Icterus neonatorum frequently occurs in babies when no anesthetic has been given. The condition is usually so trivial that no attention need be paid to it.

Dr. Sellers (in closing): In answer to Dr. Ficklen's statement I think it almost impracticable, according to my experience, to have a trained anesthetist to administer chloroform or ether over a long period of time for normal obstetrical cases, and for this reason the self administering nitrous oxide and oxygen apparatus came into popular use by many.

As to the cost of nitrous oxide and oxygen it is very small, only about $2.50 in the average case of labor. I find that very few patients will not co-operate with the physician in the use of nitrous oxide and oxygen, if they are handled properly. It is essential to start administering it during the latter part of the first stage or the first part of the second stage of labor.

Dr. McKesson reports 2,400 cases of nitrous oxide-oxygen analgesia with very satisfactory results, therefore, he considers it an ideal analgesic agent to be used in obstetrics also a good anesthetic in abnormal and operative obstetrics.

In answer to Dr. King's question we must not consider only the immediate danger of chloroform, which is great in proportion to other analgesic agents, but the remote danger as well. Example: post-partum hemorrhage, post eclampsia, especially when given over a long period of time and by an inexperienced assistant. I have not had a great deal of experience in the use of chloroform myself, but both the laboratory men and clinicians who have used it a great deal more than most of us, condemn its use. I agree with Doctors Parham and Halsey in the dangers of the use of chloroform.

In closing I wish to thank the membership for the liberal discussion of my paper.

CHILD WELFARE.*

By DR. RENA M. CRAWFORD.

One of the greatest lessons of the World War was the realization of the importance of the preservation and conservation of human life, particularly at its beginning. This realization has brought forth greater results in the European countries than in the United States. Doctor Josephine Baker says, "In Europe, notably in England, they are celebrating what is practically a renaissance of the child. England, even in the midst of war, found it possible to put into effect a nation-wide plan for maternity and infant welfare which represents the most advanced action that has been taken by any nation. In France, where the birth rate has been decreasing and where for many years the number of deaths has been in excess of the births, the child has assumed an importance as a national asset that has hitherto been unknown. Measures for the protection of mothers and children are of the first and most vital importance in France today."

In Belgium great strides are being made in the care of their infants. Before the War there were only 60 baby clinics in the country today there are over 700.

In New Zealand most efficient child welfare work is done. The whole island is divided into districts and each district has its public health nurse. Every expectant mother may receive instructions in how to care for herself and to prepare for her baby. Every mother may be taught how to feed that baby. Since 1905 New Zealand's infant death rate from gastro-intestinal diseases has been cut one-fifth, the rate in respiratory diseases has been cut in half, and it has made a beginning in the reduction of the mortality from early infancy. It now has an infant death rate of 45.

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*Read before the Orleans Parish Medical Society, May 23rd, 1921.

In the United States, we are just awakening to our opportunities, it remains to be seen whether we shall make this vision a reality. The country, as a whole, is not being looked after, but excellent child welfare work is being done in certain cities, New York, Baltimore, Washington and others. New York has succeeded in reducing her infant mortality from 111.6 per 1000 in 1911 to 82 in 1919.

Britain is doing the best and biggest piece of work in Child Welfare today. It was my privilege to be in that country, and to work in some of the clinics during the beginning of the Child Welfare Campaign, and to watch the rapid growth of the movement. In only a few months the whole of Britain was aroused to a need of the work, and every town was organizing prenatal, natal and post-natal clinics, and sending out health visitors. When the English were taught that statistics proved it was "more dangerous to be a baby in England than to be a soldier in the trenches", they began to alter the causes that made such statistics possible. Politicians and public officials became interested in public health when they were seeking men physically fit to send to the front, and found a startlingly large number of men graded in the C3 class instead of the A1 class. They realized that if England was to retain her rank as one of the greatest nations on the globe, she must have more men in the A1 rank, as Lloyd George expressed it, "We cannot have an A1 nation with a C3 population." It became easy at that time to get laws regarding the health of the child and to get financial aid from the government.

England's efforts to look after the health of her children during the war resulted in reducing her infant mortality rate to the lowest figure in her history. The chief methods she employed to lower her infant mortality were: 1. Compulsory notification of births within thirty-six hours. 2. Aid from the central government to the various local government boards. (The central government gave 50% of the amount raised by any local board to be used for approved infant and maternity work.) 3. Publication by the government of a fixed plan for welfare work, including antenatal, natal and post-natal clinics. 4. Great increase of health visitors. 5. Great increase of welfare centers.

The Child Welfare organization of New Orleans is still young, but it has passed through its early infancy and is in the growing age. The growing thing needs sustenance to maintain its physical being and an added amount to keep up its growth. At present, the organization has just about sufficient funds to maintain it at its present status and very little to be used for its further development. It has demonstrated its right to live but because of funds have been low its work has been done over so small an area of the city that very few konw what it has accomplished.

Before telling of how it has worked, I should like to quote the following figures. In New Orleans for the ten years before 1919, out of every 100 deaths reported in the city 20 to 25 of them were of babies under one year of age. The percentage was never less than 20 or more than 25. In 1919, the percentage of infant deaths fell from 20 or 25 to 14.8%. That was the first year of the Child Welfare had even a relatively sufficient number of nurses in the field. It had that year about thirty. They were placed in the districts that were poorest and most unsanitary. In the year 1919, New Orleans lost ten out of every one hundred babies born, but in the districts where the Child Welfare had its nurses, she lost between 3 and 4 out of every 100.

The aim of the organization is not to treat the sick child but to keep the well child well. There are enough doctors and free clinics to care for the sick child, but the important work of teaching the mothers how to care for their healthy babies is undone except as it is done by the nurses who go into their homes and the doctors who see them in the clinics when the nurses send them in.

The Association has a few outstanding striking cases it can point to with pride, such as cases of congenital hip displacement, or congenital syphilis or opthalmia neonatorium that would have remained untreated had not some member of the staff found them and sent them to the proper doctor or clinic for treatment. But the bulk of the work done is not of that "showy" type, it can not be pointed out or measured by gage of finger and thumb. But the nurse, who works month after month in the same district and the doctor who sees the same children week after week, developing normally with their mothers properly caring for them, they know the work the welfare is doing, and the individual mothers know when they see their babies gaining each week, and passing through the dreaded second summers without the expected diarrhoeas.

The greatest work of the Association is teaching the mothers how to keep their well babies well. The nurses of the different districts are notified of all the births in their districts, and the mother of each new born child is visited. The nurse tells her how to care for the child's eyes, how to bathe and dress it, and tells her the importance of keeping it on the breast, of feeding at regular hours. The mother is invited to take the child to a clinic when it is three or four weeks old. There it is undressed from top to toe and given a thorough examination by the doctor in charge and if the child is normal, the mother is told how to feed it and care for it, but if any remedial defects are found, she is told where to take the child to have the defect corrected. She is referred to family physician if she has one, or to one of the hospital clinics if she is unable to pay a physician. The child is then brought back each week and weighed, and the mother is instructed how to feed the child through the time of weaning and until it is six years old. To understand what the Welfare is doing, it would be necessary to see the number of normal, happy, healthy children who come to these clinics each week. If the Child Welfare work of the city were properly done, there would be no children in the first year of school with remedial defects.

Any Child Welfare organization that fails to look after the mother and to give antenatal care is very shortsighted and will always be inefficient. The New Orleans Association has had the maternity work for eighteen months. The details of this work could be given so much better by some one who has worked in this clinic than by me that I shall not discuss that subject. The need for better maternity work is forced upon our attention when we read with shame in the statistics published by the

United States Department of Labor, Children's Bureau, that the United States ranks seventeenth, respecting maternal mortality, in a list of seventeen countries. A work is being done in New Orleans that we feel pride in by the Lying-in Hospital Society. Those who do much work in the Children's Clinics are seeing the results of the work done by this Society. The majority of the children seen in Child Welfare Clinics are those of mothers who have been delivered by midwives.

The children whose mothers have been cared for by this Lying-in Hospital or by the Child Welfare Association are generally healthier than the others because they have had a fair start in life and have been fed at regular hours. But I know too little of the details of the work done by this organization to discuss it, I only see some of the results of its work.

DISCUSSION.

Dr. L. A. Ledoux: My work with the Maternity Staff allows me to add briefly to Dr. Crawford's paper. The Child Welfare has several Maternity Clinics. One in each of four districts, at which weekly conferences are held. The districts in which these clinics are located are fully covered by maternity and field nurses.

Prospective mothers are visited by these nurses and the service of physicians and nurse offered for pre-natal, natal and post-natal care. Cases are graded according to their weekly or monthly earnings. Mothers visit the clinics, are registered, examined and all necessary laboratory work is included. These cases are continually under observation and are carried to term. After delivery they receive post-natal care from physician and nurse until case is concluded. Six weeks later the patient returns to the clinic for final examination, etc.

Surely this compares more than favorably with the work of the midwives, it provides adequate care to those who cannot pay the usual obstetrical fee, and finally aids in educating women to the value of medical attendance at their delivery.

Dr. R. C. Voss: I would like to answer Dr. Callan about the statistics at Charity Hospital: It is a well known fact that many patients go to Charity Hospital to die. Also that many doctors send patients to that hospital to die, so that the hospital gets the credit for the deaths. Again, doctors are often called to see patients at the last minute and although they may be skilled physicians, they can't do much because the patients have not had the benefit of the pre-natal care. If the patient dies, who signs the death certificate? The doctor does, hence he gets the credit for the death on the Board of Health Certificates.

Dr. A. C. King: I agree with Dr. Maud Loeber when she states that the midwife should be eliminated. These women as a rule produce abortions, indiscriminately, and lie about it and are protected by the patient. They pretend to examine the urine and tell the doctor that everything is all right. They also step over into the domain of surgery and do circumcision.

If the Child Welfare would get busy and accumulate statistics on the number of cases of blindness and the frequency of sepsis, due to lack of proper preventive measures a great favor would be done the profession.

Dr. Jno. F. Dicks: I think that we are hiding too much behind the skirts of the midwife. I believe that the chief cause of the unsatisfactory work done by physicians is due to the fact that the obstetrician is underpaid. When one realizes that he is required to examine the patient, make frequent urinalysis and blood pressure observations and be present sometimes for hours at the actual delivery and attend the patient for days afterwards, we must agree that the obstetrician is underpaid in comparison to other lines of surgical work. I believe that the average physician in New Orleans gets not more than $25 for an obstetrical case. The high mortality that Dr. Crawford speaks of is not due to the midwife entirely, but the lack of care and interest on the part of the physician plays an important role. I am under the impression that statistics will show that the midwife has the best record.

To be seventeenth in a list of seventeen enlightened nations of the world is not a record of which this nation should be proud.

Dr. T. B. Sellers: I think Dr. Dicks is correct in part, but he must not lose sight of the fact that many of the physicians who are doing obstetrical work get very good fees, but are using it as a side issue to make money. Many times they go to their cases unprepared to meet the emergency of abnormal cases and this explains many of the accidents and complications, both to mother and child.

Dr. King referred to the Child's Welfare as something apart from the medical society or profession. We must consider it our Child's Welfare and every doctor should be vitally interested in its work as well as the public.

Dr. Rena Crawford (in closing): The work of the nurse is to get the history, such as the number of children, number of miscarriages, wages of the father, etc. The physician sees the child, makes the necessary examinations and gives such instructions as is needed.

The Child Welfare Clinics are in the poorer districts hence every child is visited and mothers invited to bring their children to the clinics. With reference to the "sick child" the mother is advised to call in the family physician if she has one, or to take the child to the hospital. Sir Leslie McKenzie, I believe, said that the smaller the room the greater infant mortality.

I agree with Dr. King in saying that the Child Welfare should collect statistics on the cases of blindness, etc.

HYPERTROPHIED ANAL PAPILLAE.*

By DR. A. G. HEATH, Shreveport, La.

In presenting this paper on hypertrophied anal papillæ I am doing so with the view of bringing before the society a condition which is practically never recognized by the general practitioner, and usually overlooked by the general surgeon, who includes rectal surgery as an incident in his practice. It is one of the many minor conditions which originate in the anal canal, which, while never causing such serious symptoms as to endanger health or life, or causing such severe suffering as to incapacitate the patient from his daily occupation, nevertheless, is of no small interest to the medical practitioner because of the amount of discomfort it causes. This may amount only to a feeling of uneasiness, but the hypertrophied anal papilla is often responsible for symptoms ridiculously out of proportion to the size and severity of the lesion. Many irregular practitioners, who hold themselves out as "rectal specialists", have made great capital out of the anal papillæ and have attributed to them the causation of nearly every disease that is found to exist in the human body. As a result, many of the profession have gone to the other extreme, and have completely ignored the existence of what has been proved to be definite diseased conditions of definite anatomical entities.

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*Read before the Fourth District Medical Society.

When a patient complaining of indefinite rectal or anal symptoms consults his physician, too often he is dismissed with some proprietary ointment, without any effort being made to locate the cause of the trouble. The special study of the rectum, with its allied organs, the anus and sigmoid, has brought to view many interesting conditions which have been overlooked in the past, and it is with the view of clearing up some of the obscure and indefinable symptoms which originate in the region of the anus, that I present this paper on the hypertrophied anal papillæ.

It is the anal canal, where most of the pathological conditions which cause pain and suffering, and reflexes without number, originate. Nature has been unusually lavish in her sensory nerve supply to these organs, and lesions in this region produce referred disturbances in many other and remote organs. When one considers that the anal canal measures from two-thirds to an inch and a quarter in length and its circumference about one and one-quarter inches in the contracted condition, one can see that it is not a large area to examine and study, and diseased conditions in this region should not be difficult to discover, diagnose and render the proper treatment.

The anus is peculiarly susceptible to injury and disease. First because its lining membrane, being neither skin with its tough resisting power nor mucous membrane with its generous vascular supply, but a sort of transitional tissue, is easily injured. Secondly any lesion occurring in this region has a small chance of recovery because of its meager blood supply, and its constantly changing position, and because of trauma and infection from the contents of the bowel which are constantly passing over it.

In order to understand more intelligently the condition under discussion in this paper, it might be well to say a few words about the normal anatomy of the anal papillæ. These occur as an irregular line of small saw tooth-like projections encircling the point of juncture of the anus with the rectum, sometimes called the linea denta. These papillæ vary in number from five to twelve, are usually situated at the edges of the semilunar anal valves which guard the crypts of Morgagni.

I consider these papillæ the normal tactile organs of the rectum and endowed with a special rectal sense. They have an abundant nerve supply, which accounts for many reflex disturbances, which originate when they are diseased.

Symptoms: These papillæ, being situated on the edges of the semilunar valves, are pushed and dragged downward during the passage of feces, which are more firm and harsh than normal. At each bowel movement there is a further pull and drag on the papilla, which is gradually hypertrophied.

After it has become sufficiently hypertrophied, it will not retract at once after a bowel movement, but will remain in the grasp of the external sphincter, causing the sphincter to contract. This contraction gradually becomes more tonic, and eventually we have what has been called the "tight contracted sphincter". This gives rise to one of the most characteristic symptoms of hypertrophied papillæ—that of an unsatisfied feeling after a stool—a feeling as if some particle of fecal matter was still in the grasp of the sphincter and could not be expelled, also a feeling of irritation and uneasiness, short of itching. As one patient described it to me, "It felt like the bite of some small animal", and he was sure that he had a tape worm, because he "could feel it nibbling at the anus". Another one stated that it felt like a burr held in the grasp of the sphincter.

This feeling can be immediately relieved by the insertion of the lubricated finger and pushing up and replacing the enlarged papillæ which will be found in the grasp of the external sphincter. If they are left to themselves, it will often take from fifteen minutes to one hour and a half for them to gradually retract, when the symptoms will entirely disappear. They cause spasm of the sphincter, and the constantly repeated spasms bring on a hypertrophy of the circular muscular fibers forming the sphincter muscles and the hypertrophied sphincter is the so called "tight sphincter". Another symptom which the hypertrophied papillæ cause is the so-called neuralgia of the rectum, being transferred and transmitted pains from the pressure on the nerve endings of the papillæ. One of the most common symptoms, however, for which they are responsible is pruritus ani. I do not wish to be understood as saying that they are the commonest cause of pruritus ani, because the causes are legion, but they are a common and frequently overlooked cause. Pain is not a constant symptom, but when present it is of a dull, dragging character.

Localized pain in the rectum is more often absent in diseased conditions of the rectum than elsewhere, for many diseased conditions of the rectal cavity may progress to an astonishing degree without causing any local pain on account of the lack of sensory innervation of this region. Pain, however, referred to other portions of the body, such as the sacrum, uterus, vagina, bladder, urethra, penis, prostate gland, scrotum, or down the sciatic nerves, or up into the inguinal region, is frequently caused, by pathological conditions in the rectum, which cause no local pain whatever.

Examination and Diagnosis: In making a digital examination, unless one is rather expert, these papillæ are not always evident to the touch, but are apt to be overlooked unless an ocular inspection is made. When diseased, these papillæ may vary in size from a quarter of an inch in length, by the same breadth at the base to an inch and a half in the longest diameter. They are composed largely of an overgrowth of normal tissue. By everting the anus, the tips, and often all of the papillæ themselves, can be brought into view. They are of a pinkish color, slightly paler than the normal mucous membrane of the rectum.

A distinguishing point between hypertrophied papillæ and polypi is the fact that the papilla is always wider at its base than the apex, while the polypus is always larger than the pedicle by which it is attached. The polypus is usually rounded or oval in shape, while the papilla is more or less triangular, or ribbon-shaped. Enlarged papillæ have been incorrectly designated as connective-tissue piles. They never show the characteristic varicose appearance of the internal hemorrhoid and are attached at the ano-rectal line. Containing some erectile tissue, on examination through the anoscope they will often be seen to stand out at right angles from the mucous membrane, giving the anal canal at this point a fringed appearance. Many a surgeon when he can discover no pathological lesion but finds a tight sphincter, overlooks what he may call "little tags of the mucous membrane." These are very frequently the cause of the tight sphincter, for let it be said here that no sphincter is abnormally tight unless there is some pathological lesion causing it, and a simple divulsion of the sphincter will not relieve the symptoms, as many a surgeon and patient have found to their chagrin and disappointment.

Treatment: The treatment of this condition is always surgical. The papillæ, either one or more, can be removed under local anesthesia unless the patient is an exceedingly sensitive individual, or has a funnel-shaped anus which makes the approach difficult. The removal of the papillæ is accomplished in the following manner: The anoscope, or fenestrated speculum, is inserted, with the opening directed toward the lowest papilla to be removed. A little carbolic acid on the end of a probe is placed where the needle is to be inserted; this both sterilizes and anesthetizes the area. The papilla is injected at its base with ½ per cent solution of apothesin, eucain, novocain or ¼ per cent. solution of cocain, and distended to whiteness. After waiting five minutes, the papilla is removed as close to its base as possible by any of the following procedures, the snare, the clamp, the clamp and cautery, and the ligature. It is never necessary to anesthetize the sphincter, and oftentimes the anoscope or speculum is not required. By eversion of the anus, the papilla may be brought into view, anesthetized and removed while thus exposed.

After the removal of the papilla by either method chosen, it is good practice to introduce a suppository containing some analgesic, for the patient nearly always suffers more or less pain, and by using the suppository you will probably not have to give a hypodermic of morphin. I have used the following which has practically taken the place of morphin in these cases: a suppository contains five grains of chloretone, three grains of thymol iodide, and five grains of quinin and urea hydrochloride. No dressing is required, the hemorrhage, which is slight, soon ceases, but it is always best to employ a pad and T binder to catch the drainage.

The patient is kept quiet for the first twenty-four hours and then allowed to get up and go about. The bowels are not allowed to move for two or three days at least. In the meantime he is kept on liquid diet, and the administration of white petroleum oil is started on the evening of the second day, so that the first stool will be soft and unirritating. It is advisable on the evening before a stool is desired to administer a good teaspoonful of compound licorice powder, and the first thing the following morning, to inject through a small rubber catheter six or eight ounces of olive oil or the same amount of soap suds and water into the rectum to insure a soft and easy bowel movement. The after care consists in keeping the rectum clean by washing it out twice daily with normal saline solution and touching the raw surfaces every third day with a five per cent solution of silver nitrate, and the bowel movements soft.

We often find associated with hypertrophied anal papillæ cryptitis, fissure in ano, proctitis or simple congestion of the anus, fistula, polypus and hemorrhoids.

The question that suggests itself to us is, what symptoms should call attention to the rectum? It has been estimated that one patient out of every seven is suffering from some disease, the relief of which would be assisted, or entirely accomplished, by the treatment of pathological conditions discovered only upon rectal examination. Many patients consult a physician, whose localized pain, swelling, hemorrhage, discharge, tenderness, irritation, or other symptoms call attention at once to the ano-rectal region. Many other symptoms, however, of a more general character, such as disturbances of digestion, menstruation, and the functions of the urinary organs, as well as headache, backache, sciatica, joint pains, anemia, and sometimes even asthma and acne vulgaris, are more remote evidences of diseases originating within the confines of the lower bowel.

PREVENTABLE VOCATIONAL EYE INJURIES.

By WILLIAM BEVERLY WHITE, M. D., Shreveport, La.

When the "Safety First" was adopted, various organizations, and men individually in the various trades, almost to a man rose up against it. Later as compensation became more in vogue, various of the largest manufacturing establishments under advisement instituted certain means of protection to workmen. Today we have many examples of the various precautionary methods, and accidents of all kinds have been lessened, the frequency of eye injuries among the trades to vary from 5 to 10, while among the other walks of life, find about 1 to 1000.

Some authorities claim that 50% of the serious cases require enucleation. These few figures will but impress on us the imperativeness of giving these conditions utmost consideration. The need for definite requirements to protect the eyes of industrial workers is well illustrated by the fact that in 1918 there occurred in one of our large Eastern States 705 industrial accidents resulting in loss of one or both eyes. Quoting from the Bureau of Standards, the Pennsylvania Railroad has an active Safety Department and furnishes goggles to shopworkers and locomotive drivers, yet in the year 1918, 4.6 per cent of the injuries reported on Eastern lines were eye injuries, which invariably were the result of men failing to wear protectors. It is evident that shop superintendents should give the subject more attention, and if necessary use legal measures.

It is interesting to note that of the superficial wounds to the eye, such as foreign body on the conjunctiva or cornea, 95% of the conditions are in the metal industry; that 75% of the foreign bodies that penetrate the vitreous are particles of iron and steel.

We as physicians are interested in that which will necessarily diminish the number of this sort of injuries. In the present day of Industrial Medicine, the large factories have less accidents than formerly, as the Medical Officer in charge has forwarded suggestions to the Management as to certain protective measures, which not only safeguard the workmen but also the Management.

When this "Safety First" code was first adopted, the workmen for whose interest this propaganda was promulgated were the first to resist the same strenuously, in many cases openly defying the management; and in the present day one of the largest unions in membership has one stipulation—"that there shall be no physical examination of workers." Analysis of which would mean that if a workman had, for instance, defective vision, and has a resulting injury to one of his eyes, his compensation would be guided by the final result, as we had no record of the previous existing condition. This is a twin-edged sword which works injustice to both sides of the controversy. How much better it would have been for our patient if his defect had been discovered, then put to work at a less hazardous position.

One corporation reports a reduction of 80% of injuries, another states it was only necessary to enucleate three eyes in 27 months in nine plants of his company, and in but one of these three did the employee have his goggles on when the accident occurred.

Many of the large corporations maintain their own medical attendants, and in order to teach the men the seriousness of neglecting these apparent injuries, have an established ruling if another workman should remove a foreign body from the eye of a fellow worker, both are immediately discharged. While on the surface this may appear like an unyielding point statistics prove since enforcement of this rule there have been less serious conditions following the improved modus operandi.

The Bureau of Standards has very recently published data under the heading of "Natural Safety Code for the Protection of the Head and Eyes of Industrial Workers", dividing the various processes into nine headings, each of which requires a particular type of protectors—which may include goggles, masks, helmets, hoods and shields. The various groups are as follows:

TYPE A—Protection from relatively large flying objects, such as chipping, calking and riveting.

TYPE B—Protection from dust and small flying particles, as grinding metals, and some woodworking operations.

TYPE C—Protection from dust and wind, as locomotive driving, automobile driving and electric spot and butt welding.

TYPE D—Where protection from splashing metals is required, as babbitting, pouring hot metals.

TYPE E—From gases, fumes and liquids, such as handling acids and caustics.

TYPE F—Protection from excessive amount of dust and small flying particles, as sand-blasting.

TYPE G—Reflected light or glare, as snow covered ground, reflected sunlight.

TYPE H—Protection from injurious radiant energy with a large reduction in intensity of the visible radiant energy required, as electric arc welding.

By the judicious application of the underlying principle of the above mentioned code, the number of eye accidents will be reduced to minimum. The responsibility as to whether this is enforced is to a certain extent with the general practitioner. In the majority of instances physicians do liability work for Insurance Concerns, and some of the cases are referred to the oculist, if treatment is needed. This suggestion may appear like locking the barn after the horse is stolen; nevertheless if one of us when cases come, will impress on the patients when under our supervision the necessity of wearing protection for the eyes, the continual ding-dong of this advice will finally make an impression.

It is a foregone conclusion that the artisan will complain, saying the glasses become dirty, dull, or impair his vision so as to interfere with his work, or the perspiration causes his glasses to ''steam''—especially is it so if he works around a fire. It is well known that continual wearing of goggles may produce hyperemia of the conjunctiva, which upon becoming chronic will lead to a catarrhal condition. The frame may be ill-fitting, perhaps due to the rough handling of putting on and removing of glasses. Complain of headache or weight of frame on nose. You all have no doubt had many other excuses for laxity in the artisan wearing protection, but all these excuses advanced by the artisan are insignificant and pass the pall of comparison and should not cause us to relax the prophylactic measures at hand.

The writer is familiar with some suggestions which were forwarded to the Surgeon General's Office from the Medical Research Laboratory, which was connected with the Aviation Section of the U. S. Army. Col. Wilmer, of Washington, D. C., the noted ophthalmologist, was in charge and was instrumental in bringing about changes in the goggles worn by Aviators, which have reached such a high point of proficiency. Early in the war, goggles were made of plain or colored glass and weak frames, which afforded but little protection in case of an accident. In several cases these were the direct cause of serious eye injuries following some slight mishap to the plane. The present goggles are made usually in the various tinges of yellow, and are so constructed that a direct blow on the glass may cause same to crack into a large number of pieces, but the chance of having glass driven into the eyeball itself is considerably lessened by the more recent process of manufacture.

There are no doubt a number of eyes lost daily through the lack of wearing glasses; 98% of the same would have been preventable if the parties concerned had been wearing glasss. Yet how often does it happen that a mother consults an oculist as to child's eye, and if informed it will be necessary to wear glasses, she assumes a dejected frame of mind; little does she imagine that this may be a blessing disguised.

By reviewing the character of vocations heretofore mentioned, it is not difficult to convince us that the vast majority of vocational accidents can be reduced to a minimum by protective meassures that we have at hand. The "Safety Code" enumerates the various vocations into nine groups with suggestions for the proper protection of head and eyes of the worker. The employer furnishes the protectors, the proper care and use of same to be mandatory of the employee. It is beyond the boundaries of this brief paper to discuss the treatment of wounds to the eye, suffice to say that no matter how trivial the condition, the most expedient thing to do is consult an oculist.

As previously remarked, the workmen are aware of the necessary protection for their heads and eyes in various vocations, but are continually advancing excuses, as some slight inconvenience attached to their use for not wearing the same. When a law is passed making it obligatory of the employee and the employer that these precautions be used at all times in the necessary trades, we will have a decided reduction in eye injuries and resulting blindness.

PROCEEDINGS OF THE STAFF OF TOURO INFIRMARY.

MEETING OF MAY 11, 1921.

Dr. I. A. Weil: This is the first case in Louisiana of this subcutaneous form of rhinoplasty, as far as we know, and the first one done in the Gulf States. It is rather a new operation The operation was probably done first by Rowe of Rochester and taken up and systematized by Joseph of Berlin, Cohen of Baltimore and others who are doing this operation rather extensively now. The results are, as a rule, satisfactory. The purpose is to correct nasal deformities so as to make patients whose noses are very much deformed presentable by bringing back to normal type of nose. (Patient shown.) This patient came to me first on account of a very marked nasal occlusion, and not for correction of the external deformity. On examination, he was found to have a marked lateral deflection of the nose. The nose was bent to the left with a hump on the dorsum and, in addition to a lateral deflected nose, there was marked lateral deflection of the septum and, in order to give relief from obstruction, a preliminary sub-mucous resection was done. Rhinoplasty was done later.

The technique is very simple. The purpose is to correct nasal deformities without making any incision in the skin. Incision is made in the nasal vestibule with a short, sharp knife going through the mucous membrane and the cartilage to the under surface of the skin. The knife is passed up the nose, skin separated from the bone. The skin forms a sort of tent over the bony and cartilaginous structure of the nose. The work done depends upon the form or class of deformity which is to be corrected. These deformities are of two classes —congenital and acquired. Usually the deformity affects cartilage and bone. It may be a hump or the nose may be too large and too long. It may be a bending of the nose to one side or another. It is frequently deflected to both sides, giving an "S" shaped appearance. It may be a saddle-nose instead of being a hump, a falling or sagging of the nose. The purpose in a hump is to straighten the nose; in a sagging or saddle-nose it is to insert a bone or cartilage to fill out tissue where the nose is saggy. The third class of deformity is where the nose is not particularly sunken or humped but is too broad. (The broad flat noses are very disfiguring.) (More complete description of this condition with more details of the operation will be found in the report of this case published in the June number of the *New Orleans Medical and Surgical Journal.*)

I hope to have more cases to report at a future date. I show this case at this time particularly in order to call your attention to the possibility of correction by simple operation that promises a very successful result. There is still some swelling of the nose as you see. (The swelling has been much greater.) After the swelling subsides, the contour will be better than now. The hump is completely gone and the nose instead of being bent is straight. The nose after operation is kept in the median line by means of a copper splint, the splint being made to fit each nose. It is made of sheet copper of such thickness that it can be cut with scissors and made to fit patient's nose in each individual case and held in place by Z. O. plaster. The splint is made to fit the nose and hold the nose in position. It is used continuously for about ten days and then in order to keep the nose in its position, he wears it at night for a few weeks longer.

This case is of interest because it is the first one done in the South and second because it calls attention to the possibilities of correcting deformities by simple method.

Dr. Hilliard Miller: This is a case of a patient 34 years old. Family history, irrelevant. Past History, Measles and Mumps as a child. Typhoid and Malaria 14 years ago, otherwise negative.

Menstrual History: Began at the age of 14, 28 day type, 4 day duration, no pain, flow moderate in character, no metrorrhagia, amenorrhea for three months when first seen.

Marital History: Married 10 years, three children living and well, ages 9, 7 and 5 respectively, all confinements normal and free of complications except the second which was a footling presentation; in this instance little difficulty was experienced in delivering the child. There has been no miscarriage.

Physical Examination: Head and chest negative, abdomen negative, vaginal examination reveals a pregnant uterus of about three and a half months duration. Pelvic measurements are: intercrestal 28.5, interspinous 26, external conj. 21, internal conj. not felt, pubic angle obtuse, height of symphysis 5 cm. diameters of outlet normal. Calculated date of confinement March 3, 1920.

The patient's subsequent history and laboratory findings were negative, except that her pregnancy continued 13 days beyond the calculated date. From the size of the fetus, and the general condition of the mother, there was no indication to hurry the onset of the labor on account of this delay.

March 15th, at noon, the patient was admitted to the hospital, labor pains having started one hour previous to admission. Character of the pains weak and very irregular. Short while after the pains ceased altogether and until 2 P. M. the following day there had been little or no evidence of their return. An abdominal and vaginal examination at this time revealed the child lying in a transverse position with the head riding in the left iliac fossa; it was comparatively easy to dislodge it from this position however, and to partially engage it at the brim of the pelvis. At 4 P. M. the pains returned and were of a good tone with an interval of 5 to 6 minutes. 11:50 P. M. the cervix was fully dilated with head still in its original position. Being able to partially engage the head, I ruptured the membranes rather than run the chance of having the cord prolapse with the head still riding above the brim. After manually engaging the head as far as possible, it was noted that it was in a L. O. P. position, and a marked dolococephalic type. With some difficulty, the head was rotated to an anterior position, and forceps were applied. After due traction, there was little or no progress and the forceps began to slip, so were removed. The head still being only partially engaged with full dilatation, it was determined that version would be the best procedure in behalf of both mother and child. The head was easily disengaged from its position and version was accomplished without difficulty. The delivery of the after coming was easy as the vaginal outlet was relaxed from previous labors.

The third stage of labor lasted 25 minutes, the placenta being finally extruded spontaneously; no more than the normal amount of bleeding accompanied this stage.

Patient's general condition at this time was good, reacting from the anesthetic with pulse 110, respiration 22, one hour the pulse was 80 with respiration 26. At 4 A. M., three hours and a half after delivery, the floor nurse was summoned to the room by the screams of the patient, and found her in a dying state. The patient remarked that she had excruciating pain over her heart and was unable to breathe. Within three or four minutes later, the patient was dead.

Dr. Isidore Cohn: Patient, aged 52, Diagnosis, Stricture of Rectum—Paralysis of sphincter (severed).

Family History, previous history, habits, not pertinent. Complaint: Patient was operated on fourteen years ago for stricture of rectum and double fistula. For years he has had cramps in stomach and a feeling of fullness in stomach. When bowels moved, it would be in very small quantity and very small particles of feces—would have to go very often. Has been treated for sometime by a doctor who referred patient to Dr. Simon. The latter treated him for seven weeks and then advised operation for stricture. If bowels were loose, patient had difficulty in retaining feces. Dr. Simon was unable to dilate rectum. Examination other than pelvis not pertinent. Pelvis: Scar in left inguinal region—former herniotomy. Enlarged inguinal glands. Stricture of rectum, hard, smooth, annular, external sphincter paralyzed, cut in previous operation by surgeon when operated for fistula.

Operation in detail: Colostomy for stricture of rectum, done along the lines suggested by Dr. Walter E. Sistrunk. Technique: Left rectus incision. Rectus muscle retracted inwardly. Peritoneum opened and sigmoid brought into field and a clear space found in the meso-colon. Linear incision was made in this about 1½ inches without cutting any vessel. Then an incision was made in the meso in the long axis of the gut about ½ inch along the midline incision, thus converting the rent in the meso-colon into a T-shaped incision. Ligature was applied to avoid any hemorrhage from this source. Skin, muscle, and peritoneum were then interposed between two loops of gut by chromic and silk worm gut sutures. The proximal and distal loops of the gut on the ante-mesenteric border were sutured to the peritoneum. The skin and muscle were sutured with chromic gut and silk worm. Rubber tube was interposed between extra abdominal loop of the gut and skin wound. Liquid vaseline dressing applied. One small lymphatic gland removed and sent to the laboratory for diagnosis.

Progress Chart: 3/28/21 Patient has rested well since operation Has not voided. 500 cc. saline given per hypodermoclysis. In late afternoon, took liquids freely. No nausea. Temperature 98-6/10, L. 90, R. 20.

3/29. Slept well. No pain. Has not vomited. Max. temp. 98-8/10.

3/30. Max. temp. 99-2/10, Min. temp. 98, Pulse 86, Abdomen soft, wound dressed. Bowels not (extra abdominal) distended.

4/1. Colostomy opened with cautery.

4/2. Irrigated. Wound dry. No infection.

4/3. Wound healed by primary intention. Bowel irrigated. Patient seems to have some control of bowel movements.

4/5. Bowels acted well through colostomy opening. Wound not infected.

4/8. Bowels acted well through colostomy. Wound healed by first intention. The two remaining silk worm sutures removed. May walk a little.

4/14. Bowels act daily. Almost a perfect sphincteric action. Wound healed. Patient wearing a Turck colostomy bag. Discharged.

This case was presented because of one unusual feature, that is—the control which the patient has over the artificial anus. The patient has one stool a day and suffers no inconvenience or annoyance during the balance of the day as the result of the artificial anus. No special effort was made to obtain this end. In most of the reported attempts to obtain control of a colostomy, failures have been recorded. The technique employed was that suggested by Dr. Sistrunk in a recent issue of *"Surgery, Gynecology and Obstetrics"*. It is worth while considering the comfort which a patient can obtain if such a result is possible where there is an incontinence following a paralysis of the sphincter from any cause. Further, it seems advisable to make use of a colostomy in cases of stricture of the rectum of benign origin for the purpose of giving temporary rest to the distal limb of the gut during which time there may be some atrophy from disuse of the scar tissue which will make efforts to dilate the stricture more successful.

Subsequent history: The patient still has perfect control one stool a day, and has gained twelve to fifteen pounds in weight. He is more comfortable than he has been in many years and we have been able to dilate the stricture to some extent. Patient is so comfortable that it is doubtful whether he will allow any further operative procedure to restore the normal canal.

DR. DORRESTEIN: This case was listed under the heading of "Special cases" as being acute appendicitis, but the interest was due to simultaneous occurrence of a left side lobar pneumonia with suppurative appendicitis.

This patient, a girl about 21, was referred to me by Dr. O. F. Ernst for operation for an acute appendicitis. At the time of the examination both Dr. Ernst and I thought that the temperature was unusually high for an uncomplicated appendicitis. On the day of the examination breathing on left side was bronchial with no consolidation evident. Consolidation as evidensed by dullness upon percussion and bronchophony was present next morning. The question of anesthetic troubled us very much and one of my reasons for bringing this case up here tonight was to elicit some discussion as to which would be the best anesthetic to use in a case like that other than local. We used ether and, while the patient was considerably cyanosed, there seemed to be no bad results from it. The pneumonia cleared up on the 5th day, being the 4th day after the operation with a fall in respiration and temperature. We are glad to say that the patient recovered without further mishap. Report from Pathological Department on the appendix removed was "Suppurative Appendix".

ANALYSIS OF HOSPITAL SERVICE.

FOR THE MONTH OF APRIL, 1921.

(Representing all discharges in March, 1921.)

					DEAD	Total
DEPARTMENT	**Total**	**Cured**	**Improv.**	**Stat.**	**48 hrs.**	**Dead**
Ear, Nose and Throat	170	153	12	4	0	1
Eye	14	4	10	0	0	0
Gastro-Intestinal	23	4	15	4	0	0
Gynecological	99	49	41	9	0	0
Medical	48	10	21	12	1	5
Neurological	14	0	11	2	1	1
*Obstetrical	53	47	1	4	0	1
Newborn	39	36	0	0	3	3
Orthopedic	13	0	9	4	0	0
Pediatric	11	3	2	3	2	3
Skin	1	0	1	0	0	0
Surgical	190	102	58	18	4	12
Total	675	408	181	60	12	26

DEPARTMENT	**INFECTIONS**		**DIAGNOSIS**				**Con-sulta-**
	Instl.	**On Adm.**	**Agree**	**Disagree**	**Addl.**	**Tent. not given**	**tions**
Ear, Nose & Throat	....	....	169	1	0	0	1
Eye	....	....	13	0	1	0	0
Gastro-Intestinal	...	....	20	2	2	0	2
Gynecological		....	89	6	4	0	5
Medical	....	....	41	2	2	3	10
Neurological	....	....	13	0	0	1	2
Obstetrical	....	....	52	0	1	0	3
Newborn	....	....	39	0	0	0	0
Orthopedic	....	....	11	1	1	0	2
Pediatric	....	....	10	1	0	0	1
Skin	....	....	1	0	0	0	0
Surgical	....	....	162	20	8	0	4
Total	....	....	620	33	18	4	29

Caesarian Section	2
Multiple	0
Breech, Footling, etc.	2
High Forceps	0
Low Forceps	2
Mid Forceps	0
Stillbirth	0

NEWS AND COMMENT.

Army Trained Nurses. Eighteen hundred students began the course under government auspices in 1918 when the training school for nurses connected with the Army was established. After the armistice many of these students resigned, but the present class numbering 515 has just been graduated at the Walter Reed Hospital in Washington, and is the largest group of nurses ever graduated at one time. A second branch of the class was graduated at the Letterman General Hospital, San Francisco, numbering 100. The Army School of Nursing has been accredited by the Regents of the University of New York and by the State Boards of Nurse Examiners of California and Illinois, and the graduates of the school are eligible for registration in all states where there are laws governing the registration of nurses. The graduation of so many nurses at one time will never be duplicated, for although the Army School of Nursing will continue the conditions will be those which prevail in time of peace.

The Gorgas Memorial will consist of a dignified and classic building, housing the laboratories and providing every facility for the teaching of students from the various countries who may apply for instruction in Tropical Diseases and Preventive Medicine. One of the most important departments of the new school is to be the library in which it is hoped to collect all literature on the subjects of tropical and preventive medicine available in the world. Until the completion of the new building, the Santo Tomas Hospital, in Panama, has been offered for use in its laboratories and equipment so that active research work may begin in January, 1922.

The Faculty of Medicine of Montpellier will celebrate its 700th anniversary in November, 1921. This is the oldest Medical Faculty in the world, and its birth is fixed by the present Dean of the Faculty as August 17, 1220, when Cardinal Conrad, Secretary of Pope Honorius III, authorized the first statutes by virtue of which the degree of Doctor of Medicine was granted by this institution upon its graduates. Tulane University, School of Medicine, has received an invitation to send its representative to take part in the celebration in November.

Deaf Student at Tulane.—John B. Breazeale, of Meridian, Mississippi, was graduated from the School of Pharmacy of Tulane University in June, 1921. The fact that Mr. Breazeale is the only deaf pharmacist and the first deaf man to be graduated from a university is notable. Mr. Breazeale has been attending Tulane under the auspices of the Federal Board for Vocational Education, and was Pharmacy Editor of the Tulane Jambalaya, class poet and historian. For a time he was both deaf and dumb from injuries received in government service during the war, but regained his speech.

The Rockefeller Foundation is contributing $3,000,00 for new buildings and endowments for the medical school at the University of Brussels. Two representatives from Brussels, Mr. H. Goosens-Bara of the public Hospital Board, and Mr. J. B. Dewin, architect, are at present in the United States in connection with the plans for the development of the facilities for medical education in Brussels, so as to familiarize themselves with the hospital administration in this country with a view to working on the teaching hospital of the medical school in Brussels after the methods and plans of buildings employed in the hospitals in this country

The Provisional Health Committee appointed by the Council of the League of Nations, is as follows: Dr. G. S. Buchanan, Great Britain; M. Velghe, Belgium; Prof. Madsen, Denmark; Senor Pulido, Spain; Prof. Leon Bernard, France; Dr. Charles Havelock, India; Dr. Alberto Lutrario, Italy; Dr. Yonejo Myagawa, Japan; Dr. Calmette, Morrocco; Dr. Mimbela, Peru; Dr. Chodzko, Poland; Dr. Carriere, Switzerland; Dr. Luigi Carozzi, International Labor Office; Prof. Winslow, League of Red Cross Societies. The appointment of this Committee represents a compromise designed to meet the difficulties created by the refusal of the United States to permit the *Office Internationale d'Hygiene* at Paris, of which it is a guarantor, to cooperate with the proposed health organization of the League. The new committee which is to act as advisor to the Council and the Assembly on all matters of public health will act as a connecting link between the health authorities of all countries and will form a clearing house for information concerning everything that constitutes a menace to public health.

Discovery of New Anesthetic. A new product, known as Butyn, is announced by the Abbott Laboratories, of Chicago, to be used as a local anesthetic. This discovery is attributed to the University of Illinois in whose laboratories the work was accomplished. The product is related both to cocaine and procaine, but is superior to cocaine in every respect, since it is more effective and less toxic, less irritant and more rapid in action and the anesthesia produced by Butyn is of longer duration and its solutions are slightly antiseptic.

The Sheppard-Towner Bill as amended now provides for an appropriation of $1,480,000; $10,000 to be paid to each state, and $1,000,000 to be apportioned among the states in proportion to their population, no part of the pro-rated amount to be paid until an equal sum shall have been appropriated by the legislature of the state for the purposes provided for in the bill.

Public Health Service publications have been limited to 1,000 copies according to a new law passed by the last session of Congress. Heretofore the Service has distributed 10,000 copies of their weekly report. Bulletins of the Hygiene Laboratory will also be reduced. The purpose of this reduction is to conserve white paper, of which there is said to be a great shortage.

The National Board of Medical Examiners has received an appropriation of $100,000 for its use during a five-year period for the purposes of establishing and maintaining a national standard of examination and certification of graduates in medicine. This appropriation has been made by the Carnegie Fund.

The Louisiana Nurses Board of Examiners held its semi-annual examination in New Orleans and Shreveport, June 20 and 21st. Sixty-one applicants qualified as registered nurses. The Board is composed of Drs. John T. Crebbin, President; J. S. Hebert, Secretary; George S. Brown, all of New Orleans, and Dr. Fred J. Frater of Shreveport.

American Tuberculosis Association Adopts Resolutions. On June 15-17, at the annual meeting this association adopted resolutions asking the U. S. Public Health Service to have especially trained examiners stationed at all ports of debarkation and requesting steamship companies to use greater care in accepting immigrants from parts of Europe infected with tuberculosis.

The East Feliciana Parish Medical Society on June 15 met in the office of the Secretary and had as their guests Drs. Lester J. Williams and Thos. Spec. Jones, of Baton Rouge. Dr. Williams, the councillor of the 6th District and the Roentgenologist of Baton Rouge, read an interesting paper demonstrating the practicability and usefulness of the X-Ray. The following officers were elected: Dr. T. W. Evans, President; Dr. Chas. Miller, Vice-President; Dr. E. M. Toler, Secy-Treas. A banquet at the hotel closed the meeting.

The Southwest and Missouri Valley Medical Associations will hold their joint session in Kansas City in October, 25 to 28. Dr. E. H. Skinner, of Kansas City, is the president of the Southwest Association, and Dr. W. O. Bridges, of Omaha, is president of the Missouri Valley Association. The "Medical Veterans of the World's War" will be in session during the same week. On October 24 the Mid-western Association of Anesthetists will be organized and present a program. Dr. Morris H. Clark, of Kansas City, is the Secretary of this last named body, as well as of the Southwest Association.

Isolation of Disease Carriers Approved by Court. The Supreme Court of Cook County, Illinois, recently rendered a decision sustaining the action of the Health Commission of Chicago who caused the isolation of a woman proved to be a typhoid "carrier". The American Medical Liberty League took an interest in the case on the ground that the officer was not authorized to isolate a person in good physical health even though said person was found to be a "carrier". This decision of a Supreme Court is far reaching in its significance as it strengthens the hands of the health officers who have heretofore hesitated or been uncertain of their rights to quarantine *suspicious* cases.

Child Health Demonstration Planned by American Red Cross. Preliminary plans promising to prove of great importance and unique in scope are being developed for a child health demonstration by the National Child Health Council, with headquarters in Philadelphia. An appropriation of $200,000 has been set aside for the purpose and the Council, which is composed of six leading national health bodies. The American Child Hygiene Association, American Red Cross, Child Health Organization of America, National Child Labor Committee, National Organization for Public Health Nursing and the National Tuberculosis Association, will assist some community of between 20,000 and 30,000 population and the surrounding county so as to aid in securing as nearly as possible ideal conditions for the development of its children. A Committee will be selected from experts in the community so aided which will be required to watch the demonstrations over a period of five years. The rules governing candidacy for the experiment will be outlined upon request of any community desiring to enter the competition, as it is stated that geographical limitations will not be imposed in the selection of the community, but that certain qualifications will be required. The direction of this novel health experiment is under the charge of Clarence King. The Committee which will recommend the town to be chosen consists of Dr. Richard A. Bolt, of Baltimore, general director of the American Child Hygiene Association, and Miss Ella Phillips Crandall, of New York, with Drs. C. J. Hatfield, New York; O. R. Lovejoy, New York; Miss S. L. Jean, New York; Dr. Haven Emerson, New York, and Dr. D. B. Armstrong, of Framingham, Mass.

MADAME CURIE. The reception of this famous woman scientist and co-discoverer of radium has been one of the most noteworthy ever accorded a foreigner. This is evidenced by the large number of honorary degrees conferred on her. Smith College, the University of Pennsylvania, the Woman's College of Philadelphia, and Columbia University, The University of Chicago, Northwestern University, Harvard and Yale, each one of these have conferred degrees in acknowledgment of the great service which she has done for science. Mme. Curie has received the Willard Gibbs medal also, and is the first woman to whom this award has been made, and the American University Women presented her with the Ellen Richards Memorial Prize of two thousand dollars.

X-RAY SCIENTISTS AWARDED GOLD MEDALS. The French Commission, endowed by the Carnegie Foundation, awarded gold medals to Drs. Charles Infroit, Adolphe LeRay and G. Vaillant. Dr. Vaillant is the head of the Satpetriere Radiogram Laboratory and he received 50,000 francs in addition to the medal. Drs. Infroit and LeRay both recently died as a result of their research work in the X-ray. Dr. Vaillant has been operated for ten amputations in ten years, with the loss of fingers, a hand, and finally his left arm. He still continues to experiment even in the face of these disasters.

THE LANCET, founded in 1823, and issued weekly, will hereafter be published by the Oxford University Press. Subscriptions to be mailed to American addresses should be sent to the Oxford University Press, #35 West 32nd Street, New York. Editorial communications should be sent to Oxford University Press, Amen Corner, London, E. C., England.

THE INTERNATIONAL JOURNAL OF GASTRO-ENTEROLOGY has made its appearance in the medical world and we congratulate the publishers upon the attractive appearance of the first number. This Journal should be a valuable addition to the medical literature of the country.

THE HOTEL DIEU STAFF in annual session during the month of June, 1921, elected the following officers: President, Dr. Homer Dupuy; Vice-President, Dr. H. W. Kostmayer; Secretary, Dr. H. E. Nelson; Members of Board, Drs. Jos. A. Danna, E. H. Walet; Recorder, Dr. P. B. Salatich; House Committee, Drs. C. V. Unsworth, Jos. Cirino; Medical Committee, Drs. Paul Gelpi, W. A. Gillaspie.

NEW OFFICERS FOR THE AMERICAN MEDICAL ASSOCIATION. The officers elected for 1921-22 are as follows: Dr. George E. de Schweinitz, Philadelphia, President; Dr. Frank B. Winn, Indianapolis, Indiana, Vice-President; Dr. A. R. Craig, Chicago, Secretary; Dr. Wm. A. Pusey, Chicago, Treasurer; Board of Trustees; Dr. Frank Billings, Chicago; Dr. Wendell C. Phillips, New York; Dr. Thos. McDavitt, St. Paul, Minnesota. St. Louis was chosen as the next meeting place.

PERSONALS: Among the physicians from Louisiana who attended the meeting of the American Medical Association in June were Drs. W. H. Block, W. P. Bradburn, A. M. Caine, J. A. Danna, L. R. DeBuys, Jos. Hume, U. Maes, C. J. Miller, M. Feingold, J. T. O'Ferrall, F. W. Parham, A. B. Pitkin, S. M. D. Clark, J. D. Rives, P. B. Salatich, W. H. Seemann, H. T. Simon, C. V. Unsworth, H. D. Bruns, Elizabeth Bass, F. J. Chalaron, L. A. Fortier, R. Matas, S. K. Simon and

R. A. Strong, of New Orleans; Drs. W. P. Butler, E. S. Silbernagel, O. Dowling, A. A. Herold, of Shreveport; Dr. W. H. Brent of Hammond, and Dr. Thos. J. Burrage, of Portland.

Dr. Elizabeth Bass, of New Orleans, while in attendance at the meeting of the A. M. A., in Boston, was installed as President of the Medical Women's National Association.

Dr. Arthur L. Whitmire, member of the Louisiana State Medical Society Committee on Health Problems in Education, begs to request of the profession the privilege of using any of their photographs of "Before and After" cures, or improvement, same to be circulated through the parishes where the work of this Committee is most needed. Photographs convince immediately. Pictures delivered to office of the Louisiana State Medical Society will be carefully handled and a receipt mailed for the same.

Dr. Amédée Granger was appointed chief of the X-Ray department of the Charity Hospital in New Orleans.

REMOVALS: Dr. H. C. Milburn from Ville Platte to McNary, La.

DIED. On Friday, July 15, Dr. Louis Favrot Reynaud, of Baton Rouge, La., aged 79 years, for several years professor of materia medica and therapeutics in the Tulane School of Medicine, after having practiced medicine a long time in Baton Rouge and New Orleans. He had practically retired a number of years ago.

PUBLICATIONS RECEIVED.

C. V. MOSBY COMPANY, St. Louis.

Operative Surgery, by J. Shelton Horsley, M. D., F. A. C. S.

Diseases of Children, by Herman B. Sheffield, M. D.

General Catalog of Medical, Surgical, Nursing, Dental publications.

WILLIAM WOOD & COMPANY, New York City.

Cancer and Its Non-Surgical Treatment, by L. Duncan Bulkley, A. M., M. D.

Urinary Analysis and Diagnosis, by Louis Heitzmann, M. D., Fourth edition revised and enlarged.

WILLIAM M. LEONARD, Boston.

The Allen (Starvation) Treatment of Diabetes, by Lewis Webb Hill, M. D., and Rena S. Eckman, with an introduction by Richard C. Cabot, M. D., Fourth edition.

YEAR BOOK PUBLISHERS, Chicago.

General Medicine, Practical Medicine Series, Vol. 1, 1921, by Frank Billings, M. S., M. D., and Burrell O. Raulston, A. B., M. D.

THE MACMILLAN COMPANY, New York City.

The Treatment of Acute Infectious Diseases, by Frank Sherman Meara, M. D., Ph. D., Second edition, revised.

WASHINGTON GOV'T PRINTING OFFICE, Washington, D. C.

Mortality Statistics for 1919, Twentieth Annual report.

Public Health Reports, Vol. 36, Nos. 22, 23, 24, 25.

MISCELLANEOUS:

Statistical Report of Infant Mortality for 1920, American Child Hygiene Association, Baltimore.

United Fruit Company, Medical Department, Annual Report, 1920. United Fruit Company, New York City.

Federated Malay States Malaria Bureau Reports, Vol. 2, November, 1920, by H. P. Hacker, M. D., B. Sc. (Lond.) Waterlow & Sons, Ltd.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for June, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	1	2	3
Intermittent Fever (Malarial Cachexia)			
Smallpox	3	3	6
Measles			
Scarlet Fever			
Whooping Cough	3		3
Diphtheria and Croup	1		1
Influenza			
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	33	24	57
Cancer	28	8	36
Rheumatism and Gout			
Diabetes	5		5
Alcoholism			
Encephalitis and Meningitis	3		3
Locomotor Ataxia			
Congestion, Hemorrhage and Softening of Brain	18	11	29
Paralysis	3		3
Convulsions of Infancy	1		1
Other Diseases of Infancy	9	7	16
Tetanus	1	1	2
Other Nervous Diseases	4		4
Heart Diseases	45	35	80
Bronchitis	2	2	4
Pneumonia and Broncho-Pneumonia	13	14	27
Other Respiratory Diseases	1	1	2
Ulcer of Stomach		3	3
Other Diseases of Stomach	1		1
Diarrhea, Dysentery and Enteritis	17	17	34
Hernia, Intestinal Obstruction	5	3	8
Cirrhosis of Liver	4	1	5
Other Diseases of the Liver	1	1	2
Simple Peritonitis			
Appendicitis	7	2	9
Bright's Disease	21	15	36
Other Genito-Urinary Diseases	13	12	25
Puerperal Diseases	6	5	11
Senile Debility	1		1
Suicide	3		3
Injuries	21	13	34
All Other Causes	30	19	49
Total	304	199	503

Still-born Children—White, 30; colored, 26; total, 56.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death rate per 1000 per annum for Month—White, 12.58; colored, 21.71; total, 15.09. Non-residents excluded, 12.09.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	29.93
Mean temperature	81.
Total precipitation	9.44 inches

Prevailing direction of wind, southeast.

NEW ORLEANS MEDICAL
AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 SEPTEMBER, 1921 No. 3

EDITORIAL.

VACATION.

Reader, have you ever found yourself, in summer, settled on a covered wide verandah fronting the beach on the Mississippi Sound? Was it on one of those blessed days when just enough properly placed clouds moderate the glare from the water, yet there is sufficient light to obliterate any suggestion of gloom? Were you sitting in a commodious and comfortable rocking chair wherein you could relax completely? Did there then spring up a soft, soothing breeze from the south, enveloping you like a caress, cooling you to the right point down to the very marrow of your bones? Felt you soon a gentle drowsiness which gradually overcame your physical senses and mental activities until you were not asleep yet not awake? Was it not a grand and glorious feeling?

If so, you have enjoyed the real *dolce far niente* and can sympathize with the editor and understand his plea. Even if such is not the case and you have a fair amount of imagination you still may understand the situation.

Great as are the hereinbefore feebly described sensations, they are not conducive to mental or physical exertion, to the writing of editorials for instance. The less so when the latter must be handed to the printer just after nearly a dozen more or less carefully composed and more or less neatly typed articles have had to be edited and twenty-odd galleys of proof have had to be corrected.

So, reader, if you scan this number of the *JOURNAL* closely enough to notice the scantiness of editorial matter and ideas, have a heart, excuse both and remember this is vacation time.

We hope that, whether it be on the Gulf Coast or elsewhere, you have already had, are having, or will have a pleasant vacation.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

This association will hold its annual meeting in St. Louis on October 13, 14 and 15. A new departure is announced for this meeting: instead of the ordinary reading of medical papers there will be scientific addresses and clinical demonstrations from eminent specialists in the various fields, on borderline subjects preferably, hence of as much interest, at least, to the general practitioner as to the specialist.

The last day will be devoted to clinics at the various hospitals by guests and local men both. The social end can be handled with the greater ease because of the Centennial Celebration and Pageant of St. Louis which will be held at the same date.

Further information may be obtained from Dr. Wm. Engelbach, who is chairman of the arrangement committee, addressed at the University Club Bldg., St. Louis.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

REMOVAL OF A TWENTY-PENNY WIRE NAIL FROM THE BLADDER.*

By H. W. E. WALTHER, M. D., F. A. C. S., New Orleans.

According to Hugh Cabot, in his treatise on urology, foreign bodies may arrive in the urinary bladder in two general ways: (1) those introduced through the urethra accidentally or otherwise; and (2) those which reach the bladder by perforation of the underlying tissue, whether by wounds, as in the case of bullets, or in the course of a surgical operation not upon the bladder itself.

By far the most common type of foreign bodies found in the bladder are those introduced through the urethra. Anything which can be introduced through the urethra may be found in the bladder. The most common articles removed from this viscus have been straws, hairpins, quills, nails, chewing gum, catheters and pieces of filiforms.

The following case, observed in the writer's service at the Charity Hospital, is considered worthy of report, because of the unusual size of nail removed. The history-record follows:

E. S., colored male, age 28, married, saw-mill laborer, was admitted to my urological service at the Charity Hospital on May 5, 1921, complaining of "bladder trouble".

Family History: Father died of dropsy; mother of small pox; three brothers and one sister dead, causes unknown; one brother insane and in Jackson, La., institution.

Past History: Had usual diseases of childhood. Malaria in 1917. Was insane from April, 1918, to December, 1920, during this period being confined to the hospital at Jackson, La. In 1917 had several pulmonary hemorrhages and was told that he had tuberculosis. Influenza in 1918. Otherwise nothing of note.

Venereal History: Gonorrhea three years ago, no complication. Had a single venereal sore three years ago, incubation unknown, was not told whether or no it was syphilis.

Present Illness: The "bladder trouble" started one year ago, while in the hospital for mental diseases. He complained of straining, burning, frequency and hematuria. His pain has always been most severe at the end of the urinary act. No retention. Stream alway good. Voids about twelve times daily and about twenty-four times a night. No loss in weight; appetite good; sleeps poorly; bowels regular and no pain at stool. No fever. Patient is well developed but poorly nourished. Appears perfectly sane now.

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*Presented at the Clinical Meeting held by the Orleans Parish Medical Society in the Ampitheatre of the Charity Hospital, New Orleans, June 13, 1921.

Physical Examination: Generally negative except that a slight dullness was noted at base of both lungs and subcrepitant rales in left interspaces. External genitals normal.

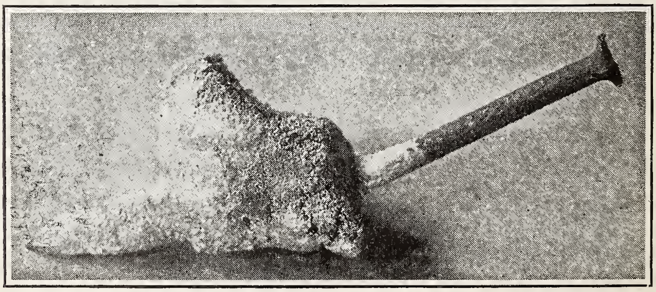
Urine: Cloudy, alkaline, 1025, albumen trace, no sugar, few epithelia, few red blood cells, an excess of pus, many bacilli and cocci.

Wassermann of Blood: Original and Tschernogubow negative.

X-Rays: Kidneys negative. Nail shadow in bladder region.

Cystoscopy: Chronic cystitis throughout. A large calculus was seen surrounding a wire nail, only the stone and the point of the nail could be seen through the cystoscope.

Operation: Under ether anesthesia, assisted by Drs. O. T. Christoffer and R. R. Nowlin, interns, suprapubic cystotomy was done. The bladder was found markedly contracted. The nail, the lower portion of which was incased by a calculus, was deeply embedded in the bladder wall at both ends. The head of the nail was fixed in the **bas fond** and had to be dissected out with the finger. The point of the nail had found its way into prostatic tissue. This undoubtedly explains why it did not perforate the bladder wall. The nail measured 4¼ inches in length. Specimen weighed 2 ounces.



The bladder was drained with a Pezzer catheter for ten days after which time it was removed, the wound healed promptly, bladder irrigations were kept up to rid vesical infection, and on the twentieth day after operation patient left hospital.

Comment: The question naturally presents itself, How did the nail get into the bladder? I think the most plausible explanation is that it was introduced *per urethram,* while patient was in the insane asylum, and for purposes of masturbation. The patient was repeatedly questioned as to how the nail got into his bladder, but he steadfastly denied any knowledge whatever as to how it found its way there.

CANCER OF APPENDIX: REPORT OF TWO CASES.

By J. M. PERRET, M. D.

(From the J. T. Nix Clinic, New Orleans.)

Malignancy of the appendix is of interest on account of its comparative rarity. Carcinoma is much commoner than sarcoma. It is to the surgeons and to the pathologists that we owe our knowledge of these conditions. Many of the cases cannot be recognized from a gross examination of the appendix and it is only when the organ is submitted to a microscopical examination that the true condition is revealed. This then seems to be a reason why every appendix removed at operation should be sent to the pathologist for routine study. If this were done it would not be long before we would have a good number of cases of cancer of the appendix on record. Again we must remember that all cases seen are not reported. The earliest case of primary carcinoma of the appendix was reported in 1838. Up to the beginning of this century only a few cases had been reported. From 1900 to the present time about 300 cases have been reported. Before proceeding to the report of my two cases, one of which was a primary carcinoma of the appendix, and the other about which there is some doubt as to the primary origin, appendix or cecum, I think it well to briefly review our knowledge of cancer of the appendix.

Incidence—Da Costa says that "malignant disease of the appendix is a very rare condition." Kelly and Noble are of the opinion that "primary tumors of the appendix are infrequent and secondary invasion is extremely rare." Kemp states that "this condition has been considered rare, but it has been demonstrated to occur more frequently than was formerly supposed." Riegel in 243 autopsy cases of cancer of the intestines occurring at the Vienna General Hospital from 1882 to 1893 found only one case of cancer of the appendix. Routine microscopic examination of 5,000 appendectomies at the Mayo Clinic by Mac Carty and McGrath showed microscopic evidence of cancer in 22 cases. In a second series of 3,039 specimens, 18 disclosed evidence of cancer. J. J. Coons in 1914 reported 4 cases found in an examination of 1700 specimens. Reimann in 1919 reports from Deaver's Clinic 17 cases from an examination of 13,151 appendices. Adams in 1919 reports a case and says that he found 3 other cases in 7,000 appendectomies at St. Thomas

Hospital. Age—Youngest case was five years, oldest eighty years. Most of the cases occur between twenty and thirty years, 24% are under twenty years; 53% are under thirty years.

Sex—More common in females. From 8,000 appendectomies at the Mayo Clinic 73% of the malignant growths occurred in females.

Morbid Anatomy—The tumors are usually small. Masses up to the size of a walnut have been reported. The gross appearance may be that of a fibrous tumor. Sometimes it has presented caseation and has suggested tuberculosis. In at least three-fourths of the cases the growth is distal to the middle of the appendix. Of the 90 cases mentioned in Da Costa only eight had enlarged glands and in four of these the glands were non-malignant. Histologically the carcinoma is usually of the spheroidal type.

Symptoms—Clinically, the history is that of some form of appendicitis.

Diagnosis—Cancer of the appendix is recognized only at operation and autopsy. MacCarty and McGrath say that in 17 of their 22 cases diagnosis by the surgeon at the time of operation was impossible and that the carcinomatous condition was only revealed microscopically. In four of Reimann's cases the condition could not be recognized grossly even when the histology was at hand.

Prognosis—The great majority of the cases are benign, but malignant possibility is to be considered as metastasis and extension have been reported. The chances for permanent cure after removal of the appendix, the seat of malignancy, is very good if the disease is limited to the appendix.

Case No. 1.—Miss M. M., a white woman of 22 years, a native of Italy, was seen at the Clinic on June 23, 1920, and complained of diarrhea. During the past month she had 12 to 16 watery stools during the day and 4 to 5 stools during the night. She had anorexia and felt nauseated after meals. She had lost 8 pounds during her present illness.

Past history was negative, except that in 1918 she had influenza for two months. In 1915 her tonsils and adenoids were removed. Menses began at age of 13 years, lasted from 6 to 8 days, 30-day type. She suffers so much on the first day that she has to remain in bed. Family history is negative for tuberculosis, cancer and intestinal diseases.

Physical Examination.—The patient is of small physique, emaciated and weighs 94 pounds. Temperature 99° F, pulse 90. Blood pressure, systolic 98, diastolic 75. Skin is negative. Mucous membrane and tongue are negative. Teeth are in fairly good condition.

The tonsils have been removed. The pupils are equal and react to light and accommodation. The knee jerks are lively. The heart and lungs are negative. Over the entire abdomen slight tenderness is elicited. There is no rigidity. The viscera are not palpable.

Operation advised on account of dyspeptic symptoms and dull pains in appendix region since her first visit to the Clinic.

Operation.—On September 21, 1920, under ether anesthesia the abdomen was opened by Dr. Nix and the appendix removed. Operative diagnosis: acute appendicitis. The patient made an uneventful recovery and left the hospital on the ninth day. No idea of the malignant condition of the appendix was suspected at time of operation.

Pathological Report.—The appendix is about 6 cm. in length by 0.5 to 1 cm. in breadth. Its general appearance is club-shaped with the large portion at the free extremity. In appearance and to the touch it suggests a chronic thickening. The vessels of the serous coat are engorged. The serous coat is rough and small bands of fibrous tissue suggest its adhesion to surrounding tissues. On section the wall is thickened and the mucosa is well defined, in some places broader than normal. The contents show mucus and feces. Microscopical examination shows the relation of all layers, serous, muscular, submucous and mucous well retained, though there is a distinct thickening of every structure, particularly at the free end of the organ. The mucosa shows no abnormal shape except at the broadest portion of the appendix where there is marked disarrangement (dipping) of the glands into the deeper structures (submucous and muscular coats). In these tissues there is also marked infiltration of embryonal epithelial (glandular) cells. There is no attempt on the part of these cells to form glands though it is evident that their origin is from the mucosa. The cells are mostly arranged in groups and show complete lack of differentiation and there is active mitosis of many. Slight chronic exudative inflammation is present.

Diagnosis.—Carcinoma of the appendix.

Progress Notes.—January 20, 1921, patient returned to Clinic and wanted to know why she was not gaining weight more rapidly. Her present weight is 97 pounds. She weighed 80 pounds on leaving the hospital after the appendectomy. She also felt weak. Up to a week ago she had had for three weeks a slight afternoon rise in temperature. Her appetite and digestion are good and her bowels are now regular. Patient is in better physical condition than when previously examined. Crepitant rales were heard at left apex but did not persist. Abdomen is negative. Vaginal examination negative.

January 19, 1921, Fluoroscopy of chest, by Dr. E. Escalante. Lungs, diaphragm, heart, aorta and mediastinum were negative.

April 19, 1921, patient again seen at Clinic. One and a half months ago she contracted a chest cold which is now practically well except that she had a dry cough. Appetite and digestion are good and bowels move once or twice a day. Her appearance is good and she now weighs 102 pounds, a gain of 22 pounds since her operation, on September 21, 1920.

Examination of heart, lungs and abdomen are negative. In spite of the repeated negative physical examination of her lungs, I suspect tuberculosis on account of her physique, her susceptibility to respiratory infections and her Italian extraction. It is too soon to say whether she is cured of malignancy.

Case No. 2.—Mrs. J. Y. Le J., white female, age 44 years. She complained of abdominal pains for the last two years, much worse at present. No menses for the last three months. Examination showed a large sensitive mass above the appendix region.

Pre-Operative Diagnosis.—Appendicial abscess.

September 18, 1920, operation by Dr. H. W. Kostmayer. Abdomen opened by right rectus incision. A large, hard friable mass was found occupying the head of the cecum, the terminal ileum and the appendix. First attempt at freeing the mass led into the cecum, next attempt detached the mesentery from the terminal ileum. Drains were inserted after removal of a section for diagnosis. Patient died the next day probably from toxins rapidly absorbed during the operation.

Pathological Report.—Tissue received measures 6 cm. in length and 1½ cm. in thickness at its greatest width. Irregular in outline, no definite appearance of an appendix, though on section there is seen an irregular lumen, with intermittent stretches of mucosa. Lumen contains a thick, dark brown colored exudate. Outer surface shows bands of dense fibrous tissue with strands of unstriped muscle tissue and here and there groups of lymph adenomatous tissue (lymph follicles). There are also a number of transverse and longitudinal sections of glandular elements, some showing mucus-bearing cells (goblet cells). In other sections the normal histology of the appendix is more easily recognized. Throughout the entire tissue are groups of cells, epithelial in type, but with imperfect differentiation (embryonal) and irregular in size. Many show active mitosis. There is some attempt of the cells of some of these groups to arrange themselves in glandular formation. The attempt is very imperfect. A number of eosinophiles and plasma cells are scattered throughout the tissue (chronic exudate inflammation). The dark-brown colored contents of the lumen represent cell detritus, mucus and blood.

Diagnosis.—Carcinoma (glandular) of the appendix.

My thanks are due to Dr. H. W. Kostmayer who has furnished me the data of Case No. 2 and has allowed me to report it; and to Dr. M. Couret, pathologist of Hotel Dieu, for the excellent pathological reports.

References—No attempt has been made to review the literature. To those who are interested in this phase of the subject, I will refer to an article by E. H. Boyer, B. Sc., M. Sc., *American Journal Medical Sciences,* Vol. CLVII, No. 6, June, 1919, entitled: Primary Carcinoma of the Vermiform Appendix.

Da Costa—Modern Surgery, 8th Edition, 1919.

Kelly and Noble—Gynecology and Abdominal Surgery, 1910.

Kemp—Diseases of the Stomach, Intestines and Pancreas, 3rd Edition, 1917.

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Practical Medicine Series, Vol. 2, 1920.

UNSUSPECTED SINUS INVOLVEMENT AS A SEQUEL TO CONTAGIOUS AND INFECTIOUS DISEASES.*

By E. V. WHITAKER, M. D., Baton Rouge, La.

The purpose of this article is not to reiterate the classic symptoms of the various forms of sinusitis, nor to disclose any recent discoveries or theories appertaining thereunto; nor is this a treatise on the differential diagnosis and treatment of the individual chronically involved sinus. On the other hand, this article is written for the benefit of the general practitioner, to call his attention to the vague, indefinite symptom-complex so little understood and so much overlooked in sinuses in the chronic state.

It is safe to say that at the present time there are more cases of unsuspected chronic sinusitis than ever before, the vast majority of these untreated, or improperly treated cases are the direct result of the influenza epidemic of 1918-19. The presence of a chronic sinus meaning that at some past time there must necessarily have been an acute sinus, the question naturally arises: Why was the acute sinus overlooked by both the attending physician and patient? The answer is simply that the patient did not complain of any pain or any other symptom that would lead the physician to suspect an acute sinus, the patient feeling practically none on account of the mentality and entire nervous system being so intensely obtunded by the virulence of the toxins of influenza.

Thus it will be easily understood why the general practitioner is so likely to overlook the probability of a chronic sinusitis when there is no tangible history of there having been an acutely involved sinus.

The symptomatology of this affection is by no means limited exclusively to the involved sinus or to the head, but there are certain vague, indefinite general symptoms to be considered as well. As to local symptoms, the absence of pain localized in the involved sinus, or failure to produce pain upon pressure, proves absolutely nothing.

Headache resulting from sinus affections is one of the commonest and at the same time one of the least understood of all the symptoms associated with this disease, especially regarding its character, lack of constancy, and localization. As an individual symptom indicative of disease of a particular sinus, it is thoroughly unreliable; while its presense or absence in the entire symptom complex is most important. Its mere abscence proves nothing, while its presence may be of inestimable value in making a correct diagnosis. That numerous cases of sinusitis go unrecognized is well shown in the following statement by Hajec: ''Many cases of sinus disease with slight nasal symptoms go through their entire life with the diagnosis of chronic headache, taking all manner of cures, such as electro and hydro-therapy, sea-baths, general and special (body) massage, without its ever occurring to anyone that the headache might be caused by a structural disease in the immediate neighborhood (accessory sinuses of the nose).(1)''

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*Read before the East Baton Rouge Parish Medical Society, May 11, 1921.

The cause of the headaches when present in chronic sinusitis depends upon one or more of several conditions, viz.: swelling of the mucosa with pressure or irritation of the nerves; direct contact of swollen mucosa; stasis following obstruction of the nasal passages; ulceration of the mucosa with involvement of the nerves; reabsorption of toxins formed within the sinus; disturbance of blood and lymph circulation at the base of the brain.(2)

The inconsistency of headache in chronically involved sinuses is one of the most misleading symptoms, the violence of the pain having apparently no relation to the severity of the disease. In some cases the headache, often of neuralgic type, will be almost unbearable with only a mild form of sinusitis; in others the pain is mild or entirely absent,(3) yet there is severe sinus involvement, with enormous tissue changes having taken place in the affected sinus.

In considering the character and location of these headaches the physician must always bear in mind the numberless ramifications of the trigeminus nerve in order to fully appreciate and understand the pain, owing to its being referred to other parts of the head than the immediate vicinity of the diseased sinus. The pain may take on any form; often it is practically indistinguishable from ordinary trigeminal neuralgia, especially the supra-orbital type; or it may be of a vague, dull heavy

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1. Hajec (6), S. 13, 1909.
2. Grunwald: Die Lehre von der Naseneiterung, S. 114, 1896.
3. Holmes: Head Pains Caused by Inflammation of the Accessory Sinuses of the Nose, Ohio State Med. Journ., Feb., 1906.

character, or pain of any degree of severity between these extremes. One stable characteristic, however, is always observed; diffuse headaches from accessory sinus disease, during recurrent attacks, cause pain in the same portion of the head.(4)

These headaches are frequently confounded with the headaches caused by errors of refraction, and are very often treated for such, the sole result being that all parties concerned are disappointed by the patient getting no relief whatever. What was mistaken for an ordinary error of refraction was in reality a profound muscular asthenopia and loss of accommodation due to reabsorption of toxins, to which the nerves and muscles of the eye are particularly suspectible. Not infrequently some form of organic disease of the eye is treated *per se* with no satisfactory result whatsoever, the ophthalmologist, himself, being much perplexed at the stubborn persistence of the malady. In a surprisingly large number of these cases examination will reveal a chronic purulent involvement of the deep (posterior) ethmoidal or sphenoidal sinuses. This form of ophthalmic complication will be readily understood when one considers the relation and proximity of the optic chiasm, the optic tracts, and the orbital cavity to these structures. The close proximity of the frontal, ethmoidal, sphenoidal, and maxillary sinuses to the orbit make clear the necessity of distinguishing the affections common to them. Sometimes the condition that gave rise to the sinus inflammation affects also the eyeball, including various chronic inflammatory diseases.(5)

Changes in the cornea(6) and uveal tract,(7-9) as well as the choroid,(10) retina, and iris,(11) have frequently been reported by ophthalmologists. Retro-bulbar neuritis,(12) which may result in atrophy and loss of vision, also occurs as a complication of accessory sinus disease.

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4. Skillern: Accessory Sinuses of the Nose.
5. L. Webster Fox (Philadelphia): Diseases of the Eye.
6. Gradle: Intra-Ocular Diseases Brought on by Diseases of Nasal Sinuses. Ophthalmology, Vol. 5. April, 1919.
7. Zeim (187).
8. Posey: Some Ophthalmological Phases of Diseases of the Accessory Sinuses of the Nose, Journ. of Eye, Ear, Nose and Throat Dis., March and April, 1905.
9. Fish (189).
10. Broeckaërt: Opacites des corps vitrés, etc. Reue hedb. De laryn. Jan. 5, 1901.
11. Mason: Iritis Due to Diseases of the Sinuses. Iowa Med. Journ., Dec 15, 1907.
12. Fish: A Study of 36 Successive Cases of Optic Neuritis. Nasal Accessory Disease Present 26 Times. Laryn., Rhin., and Otol., Vol. 22. 1907.

One of the most notable early signs of posterior sinus disease is an enlargement of the blind spot,(13) the presence of this symptom being almost pathognomonic of posterior ethmoidal or sphenoidal empyema. The optic nerve seems to be particularly susceptible to the action of toxins, and limitation of the visual field is often the first symptom of a sinusitis. That this action is toxic is proved by the rapid return to normal of the visual disturbances after a radical operation.

The general constitutional symptoms are sometimes more vague and less understood than the symptoms limited to the cranial area. This train of symptoms very frequently simulates in practically every detail the symptom of incipient pulmonary tuberculosis: slight rise of afternoon temperature; lowered blood pressure, with acceleration of the pulse; loss of weight; loss of energy; impaired digestion; sallow complexion; malaise, lassitude, etc. More frequently than one would suppose a chronic sinus is diagnosed as incipient tuberculosis, one striking example of which will be mentioned later in the history of some of the author's cases. I feel that it will not be remiss at this juncture to quote verbatim from an unusually able article by Webb and Gilbert, Colorado Springs, from the *A. M. A. Journal* of March 12, 1921:

> "In 1919 one of us briefly referred to the failure of internists to realize the dependence of many forms of bronchiectasis and chronic bronchitis on disease of the accessory sinuses and it appears that physicians still do not request thorough investigation of the nose in such conditions. Mullin and Gilbert, in 1920, laid further emphasis on such associated conditions. Since 1918 we have made roentgen-ray examinations of the accessory sinuses in all cases of chest disease, when the sputum proved repeatedly negative to the tubercle bacillus. The results have fully confirmed the French writers. Few cases of bronchiectasis or of chronic bronchitis have been found in which chronic infection of the accessory sinuses was not demonstrated. Bilateral empyema of the antrum is most frequently encountered. At times all the sinuses are involved. The findings have been invariably proved correct by the opening and washing of pus from these sinuses. Such pus usually contains pneumococci, similar to those found in the sputum.
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> "Our cases have been of long standing, and in consequence the relief and the improvement of the cough, even with the additional postural drainage of the chest, have not been so marked, as in the cases of shorter duration reported from France.
>
> "We have been especially impressed that the history in many cases was negative to nasal disease, the patients denying pain, nasal

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13. **Van der Hoeve:** Vergrosserung des blinden Fleckes ein Fruhsymptom fur die Erkenrung der Sehnervenerkiankung bei Erkankung der hintern Neben hoblen dei Nase. Arch. f. Augenheilk., Vol. 67, S. 101, 1910.

discharge, or any sign suggesting nasal infection. They have been most part treated over varying periods for pulmonary tuberculosis."

Another prominent, but unfortunately much misunderstood, or overlooked, symptom of chronic sinusitis is rheumatism, the rheumatic pains varying in every degree of intensity from slight intermittent twinges to constant pain of almost unbearable severity. The trigeminus, musculo-spiral, and sciatic nerves are particularly susceptible to the toxins of pus resorption.

Another hazy feature of this vague symptom-complex is digestive disturbance in its various forms. The feasibility of the presence of this complication will be readily understood when one considers the effect upon the entire digestive tract of the constant swallowing of small quantities of pus, dripping from a chronic sinus, over a period of months or even years. Fluoroscopic examination with the barium meal will show marked hyper-peristalsis.

As to diagnosing these sinuses in the chronic state, the author feels safe in stating bluntly that the only positive means of diagnosis is the X-ray. Before the advent of the X-ray, transillumination was regarded as the diagnostic method par excellence. It undoubtedly has its merits, but in many respects, and for many reasons, is unreliable. The presence of a shadow may within reason indicate a purulent involvement of the sinus; at the same time the shadow may be due to an irregularity in the thickness of the bony walls, which may lead to all kinds of errors in diagnosis. Moreover, the purulent secretion is frequently unlike in consistency, being thick and perfectly opaque, throwing a well defined shadow, or very thin and transparent, throwing no shadow at all, thereby deceiving the physician into overlooking the very real presence of a chronic sinus.

Recently the author has operated upon 19 cases of chronic sinusitis; not one of these cases showed anything, whatever, under transillumination that would lead one to suspect a chronic sinus. The X-ray, however, revealed chronic sinuses in each case. It may seem like a paradox, but three more cases in which transillumination showed a well defined shadow proved negative to sinus involvement under the X-ray.

Three histories chosen at random from the above mentioned cases will illustrate the contents of this paper.

Case No. 1.—D. P., young lady 23 years of age. Had been treated for incipient tuberculosis without result. Patient continued to lose weight and energy. Examination showed markedly enlarged tonsils, which were promptly removed, with some, but not sufficient improvement resulting. As patient gave history of having had influenza in 1918, X-ray of sinuses was suggested; this revealed a left maxillary sinusitis. Radical drainage of sinus was done; patient presented self for examination three months later with ten pounds gained in weight, marked clearing of complexion, and entire disappearance of previous symptoms.

Case No. 2.—B. K., young lady, age not known. Nine years ago patient suddenly developed much trouble with the eyes following a six-weeks' illness with typhoid fever. Refraction revealed mixed astigmatism, which was at once corrected, but without satisfactory results. Subsequent refractions gave no relief. Patient suffered with mild headaches in the afternoons; also marked vertigo upon stooping over at any time. Had not been able to use eyes for any kind of close work in the afternoon since trouble began. Examination under X-ray revealed chronic maxillary sinusitis. Operation and drainage done six weeks ago; vertigo and afternoon headaches have entirely disappeared, there is also marked improvement in the eye condition.

Case No. 3.—Lady, age unknown, came to office for refraction, giving every symptom of eye-strain. Examination showed glasses already worn to be correct. X-ray of sinuses suggested, which revealed chronic maxillary sinus. One week after operation headache and all symptoms had disappeared.

The above mentioned cases will show the deceptive, insidious character of sinus disease; also illustrate forcibly the necessity of X-ray examination in order to arrive at an accurate diagnosis.

The author is indebted in no small degree to Dr. Lester J. Williams, roentgenologist, for valuable collaboration and many points of interest in compiling this article.

A CASE OF LONG-CONTINUED MASTURBATION IN A GIRL, CURED BY FRIGHT.*

By EVERETT M. ELLISON, A. M., M. D.

Clinical Associate in Medicine, The George Washington University Medical School, Washington, D. C.

It was inculcated upon me in early boyhood that girls and women are very little, if at all, "lower than the angels." It is far from my aim now to try to prove that "the female of the species is more deadly than the male." But the light of my new day in this matter did dawn down in Tennessee more than twenty years ago, when I became casually acquainted with a young woman, who was working her way through a Church college by teaching music during the summer months and who by her public conduct and conversation impressed my family and friends as being thoroughly good and upright. Later on, she became the head of the Music Department of a boarding school under the control of the Methodist Episcopal Church and was summarily discharged therefrom after a few months for having been found guilty of supplying a large group of girl students with rubber phalli and teaching them their use.

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*Read before the Medical Society of the District of Columbia, April 28, 1921.

Berger in 1876 expressed the opinion that 99% of the young of both sexes practice masturbation and that the remaining 1% conceal the truth. This view is probably extreme as was the view of a young native of the Phillipine Islands, bright and well-educated, who remarked to me one day several years ago, "I believe that girls are virgins only until they are six years old."

Self-abuse is usually classed as a habit neurosis. It is much more prevalent among Latin and Oriental races than the natives of temperate climates, especially among adults. Among adult women, widows are counted leaders in the practice, and city girls are more addicted to it than are those reared in the rural districts.

It is practically impossible to obtain anything like accurate information as to its prevalence among females. Most women, if asked about themselves or their daughters, manifest profound astonishment and intense indignation, and proceed to deliver a sharp lecture on morals and manners. We do know that the affection among infants is much more common with females, probably due to the much greater exposure of their genitalia to long continued reflex excitation. Anything rubbing or irritating the parts may produce masturbation, hence the necessity for greater caution on the part of parents and nurses. Any child carelessly permitted to lie or sit around or to go about without clean, well-fitting diaper is prone to meddle with itself. The child is quite naturally inclined to explore its anatomy rather extensively. It will readily locate and manipulate its genitalia, deriving more pleasurable sensations there than elsewhere, which results in the easy acquisition of the habit. According to some observers, all bed-wetters in infancy are masturbators in a certain degree.

It seems that masturbation is the rule rather than the exception among the mentally defective. And it must not be forgotten that mental deficiency is the cause rather than the effect here.

It should be borne in mind that changes found in the genital organs of masturbators may not be the cause but are often the result of manipulation. For instance, one sign generally accepted as virtually pathognomonic of the habit in females is unilateral hypertrophy of the labia majora.

Rachford in 1907 delivered his Presidential address before the American Pediatric Society on "Pseudo-Masturbation in Infants." He propounded the unproved theory that the practice in infancy and childhood is not the practice of the adult. He reported the intensive study of 52 cases, 48 females and 4 males, most of them his own patients, and was convinced that the habit in infants under two years of age will, in time, subside under almost any intelligent form of treatment. He believed the tendency to be toward spontaneous recovery and found the average length of time required to bring about this result to be 19 months.

Lanphear in 1895 reported a case of excessive masturbation in a girl 7 years old. She was discovered as a masturbator at 3 years old, producing friction of the vagina with her index and middle fingers. Sent to school at 6, she was soon found having sexual intercourse with boys from 10 to fifteen years old. Withdrawn from school and confined strictly to her home, she was soon caught masturbating again and would do it in the presence of anybody and everybody. Broca in 1863 before the Paris Surgical Society cited a case of uncontrollable self-abuse in a girl 5 years old, which resulted in excessive emaciation and delirium with hallucinations. West in 1905 reported two cases of interest. The first was a girl 5½ years old. She had been always pale and undersized, except at time of birth; was obstinate and easily provoked; was extremely slow learning to talk and still talked imperfectly; had had a large number of seeming convulsions. Her performances were first observed at about 6 months old, her grandfather seeing one of them decided that it was petit mal. These never occurred during sleep nor in her father's presence. If her mother saw her begin the act, a sharp word would stop it, but once begun it would be carried through in spite of everything. The second case died as an indirect result of her masturbation. She was the only child of a mother 43 and a father 30. Her habit, taught her by her mother, was to rub the vulva with to and fro movements while sitting cross-legged on her mother's thigh. Finally at 20 months old, she contracted broncho-pneumonia, which, probably due to her increased masturbation, did not yield to careful treatment. The physician demanded that the habit be checked, which was done by the employment of some force. After fighting vigoroulsy at first, she finally surrendered, seemed to lose all interest in life, and permitted her attendants to do whatever they liked with her. She soon developed acute nephritis, with suppression of urine, and died.

Cautley in 1897 reported the case of a well-nourished girl of 11 months old, with negative family history and with no personal history of worms, leucorrhea, etc. She was breast-fed for three months only. The mother advised that for two months the child had had a habit of ''straining'', which had become more and more frequent. She would cross her legs and rub her thighs together, with hands tightly crossed over the chest. She would get very red in the face, sweat freely, and seem quite exhausted, each performance lasting about two minutes. Abt in 1907 reported the case of a girl 8 months old. Her parents were cousins. She practiced simple thigh friction, which was followed by marked lassitude and prostration. Rachford in 1907 reported the case of a girl 6 months old, whom he saw at 3 years. Her father was an alcoholic, her mother a neurasthenic. Her attacks, four or more in 24 hours, were worst when she was constipated. She practiced thigh friction, rocked, got red in the face, became excited, perspired, and often slept five or ten minutes. She was apparently cured in four months by force, mild punishment, bribery, soothing ointments, potassium bromide, and belladonna. Jacobi in 1889 reported the case of a girl 3 months old. She masturbated as often as ten times daily. She would bring her thighs together and rub them, perspire, and appear exhausted. Hand in 1907 reported the case of a girl 3 months old. Her fontanel was open at 20 months. She had many attacks daily of thigh friction, followed by flushing, pallor, and perspiration. Her affection was charged to oxyuris vermicularis, and was apparently cured by the use of santonin, quassia, nerve sedatives, topical applications, and tonics.

Case. I wish to report that of a girl born in the District of Columbia in November, 1911. Her maternal grandmother, of Italian descent, after being divorced from her husband, of French descent, was for many years the mistress of a house of prostitution in New Orleans. Her father is a native of Indiana, of German-English descent, is intellectual and cultured, now practicing chiropractic in

Washington, was 23 years old at time of marriage, ignorant of his wife's family history. Her mother was born in New Orleans, was fairly well-educated in the public schools, was studying music when married at 19. It is the father's belief that the mother had cohabited with other men prior to marriage and that he was not responsible for her second pregnancy, which was ectopic and from which she died after undergoing three surgical operations in a fortnight in a Washington hospital.

The birth of this patient was instrumental. She was breast-fed for 5 months. When 11 months old, her mother's death occurred. From December, 1912, to November, 1916, she was taken care of by her paternal grandmother in New Orleans, since which she has been with her father and stepmother in Washington. She began to walk at 11 months and to talk at 12 months. She has always been wiry but never robust, and is somewhat undersized and anemic at present. She has never been dangerously ill but has suffered attacks of measles, pertussis, and tonsillitis, and had a "weak stomach" until about two years ago. Her school life began at 6, and she is now in the third grade. She is considered lazy in her studies but very bright otherwise. In conversation, she manifests precocity, talks much like an adult, comprehends most surprisingly what others say to her or in her presence. She enjoys play, just as other children do, and is fond of dolls as the average girl. She seldom plays with boys, and when she does, she likes to touch them and "bump into" them. Her disposition is quite stubborn, and she seems to be extremely absent-minded. At 3 years, she was taught to dress herself, but even now she has to be told over and over again every morning just how she must proceed. One of her interesting diversions is very careful inspection of the clothing worn by women, after which she can describe such clothing in detail.

At 3, her father was amazed one day to learn from his mother that the patient had masturbated most all her life. The practice was begun during her first year, the exact date not known, and the grandmother had done all in her power to stop it without success. I feel that the grandmother deserves a good deal of credit for making this discovery, for it is not an easy discovery to make, and it is very certain that thousands of infants do masturbate often and for long periods without the slightest suspicion of such a thing on the part of their parents, nurses, or other attendants. Presumably, her act was performed by thigh friction at first. It was observed that she would struggle with her thighs and hips, would perspire freely, would really act quite like an adult woman in an orgasm. As she grew older, she would press down upon the genitalia with one hand on top of the other, usually flat on her back and with all her clothing on. She was never seen masturbating more than once daily, and there seemed to be no special hour of the day for it. The grandmother, the father, and the stepmother worked hard during all these years to break her of the habit: they tried kindness and cruelty, reward and punishment, everything suggested to them, but unavailably. Once, her father compelled her to masturbate in his presence, hoping thereby to shame her into surrender. It made no difference with her . Two years ago, her angry stepmother put her (with all her best clothing on) into a large bath tub, turned the water on with full force, and assured her that she was going to drown her. She finally believed that her stepmother was in earnest and began to scream wildly for help from the neighbors. She was frightened into making splendid promises but masturbated the very next day. Her parents required her not long ago as punishment to give her bracelet, her hat, and other things which she prized most highly to other children. She was broken-hearted to lose these articles, but she went on abusing herself just the same. The father is strongly inclined to charge the habit to maternal influences, and it seems that he is justified in so doing. In her infancy, she was cared for to some extent by a colored woman of all work and by a young colored girl, who were trusted implicitly by her parents and whom they never felt any justification to accuse. She lately informed her father that she used to masturbate while in bed with her grandmother. She does not hesitate to admit that she has always derived pleasure from the performance. Asked why she does it, she simply replies that it is "a habit". She declares that she does not know when nor where nor how she acquired it.

In October, 1918, the parents told me their story and sought my advice. A few days later, we took our patient to Emergency Hospital with the understanding that on account of her vicious conduct she would have to be operated upon. She had manifested no particular discomposure while getting ready for the journey to the hospital, but she did appear unusually calm and solemn while en route. Upon our arrival, I called the Resident Surgeon to my assistance. We placed her upon an operating table and examined her genitalia, which seemed normal except for being somewhat overdeveloped. In a most serious manner, we talked to each other about the grave operation contemplated. She kept her eyes fixed upon us and listened to what we were saying with bated breath. We explained to her that the operation would be most extensive and mutilating, that she would thereafter be abnormal and deformed, telling her that we had performed this same operation with brilliant success upon other girls like herself. She believed that we meant business and finally broke out crying pitifully and begging for mercy. We then consented, upon her promising us to behave properly in the future, to postpone the operation indefinitely, or until she might be seen again abusing herself. She has been watched almost constantly since that time, particularly when in the toilet room and when awake in bed, but has not been seen once in the act of masturbation nor has she at any time alluded to her hospital experience.

Will this girl's masturbation affect her mentality later in life? Will she be able to marry and have sexual intercourse normally? Will she be able to get along well with her husband? These questions in the light of our present knowledge might be answered either positively or negatively, arguments pro and con may be readily presented, but it would be most interesting and helpful to observe her future in these respects. Also, it will be determined in time whether the fright occasioned by the threatened operation may produce a frigidity or mental abnormality in our patient.

TREATMENT OF URETHRITIS.*

By. DR. M. H. FOSTER, Alexandria.

Introduction—It is not the purpose of this paper to propose anything new, but rather to suggest the application of certain now well established factors of treatment with greater diligence and uniformity and also to secure the recognition of venereal infections upon the same status as any other infectious disease. Meningitis has never been considered a jocular matter. Neither is gonorrhea a joke! Few of us could detect the difference microscopically. Economically and epidemiologically however, meningitis may well be viewed lightly in comparison with gonorrhea, for as Mr. Albert (the famous specialist on City Building) says, "Gonorrhea and its consequences levy a far greater toll upon our communities than any other communicable disease." During the present year I have treated as many as 70 gonorrhea patients in the same day, and on another date have examined 40 to 50 smears for diagnosis or treatment control, and I believe with Alex N. Thompson of New York, that the number of new infections is not on the increase, but in some places at least it is now beginning to decrease.

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It would not seem to the best interests of the community for all practitioners to refer every gonorrhea patient to the specialist for every practitioner of medicine should be active in the campaign for safe and sane education; and 100% co-operation is necessary for protection against the foreign wolves of the popular advertisement, ignoramuses in general, and from the resident representative of that maladjusting Lochinvar from out of the West. The qualified doctor with adequate equipment is considered fitted to treat whatever conditions he may be sufficiently interested in, but if he be not fitted to do full justice by his patient, he should promptly refer him to the best available talent, and frankly furnish him with a definite reason for his action, insisting at the same time that he go to the colleague to whom he has been referred and not fall into the hands of any convenient faker.

Anterior Urethritis—With all due respect to the prevalent teaching that gonorrhea is a self-limiting disease, I continue to note widespread dissatisfaction in regard to the amount of time commonly consumed during its self-limitation, and I must remark further that there is a certain discontentment because of the complications which customarily follow. Herein lies the argument for treatment, the appeal for abortive treatment, which follows:

1. Rest in bed, allowing bland diet and fluids liberally. Sweet milk seems especially favorable, but strictly liquid diet

is obviously undesirable for we wish to mobilize every force of the body to repel an invasion, and a stiff resistance is unlikely on liquid diet. All the heavy red meats, pastry, highly-seasoned and spicy drinks, alcoholics, ginger ale, even Coca Cola, are eliminated from the diet. Tea and coffee are sparingly allowed.

2. Urethral antisepsis is very well accomplished with 1% to 2% Mercurochrome injected after urinating, repeated one to two hours apart, and held for five minutes. Asepto pistonless syringe No. 204 is used. All piston syringes for urethral injection belong back in the past century. The silver salts may be employed if preferred, but do not seem quite so certain to arrest the discharge.

3. Frequent, systematic flushings are insured by the copious ingestion of fluids, and this is in every way preferable to gravity irrigation, so dangerous at this stage. This will prevent the deeper extension of pus with resulting folliculitis, lymphangitis and lymphadenitis. After three days the treatment is suspended for two days observation, and if gonococci are found, he is placed on methodical treatment, but if unable to demonstrate organisms the abortive plan is considered successful.

From the present point of view every case with unarrested and persistent discharge is considered complicated, for the crypts of Morgagni, and glands of Littré are involved, which means submucous extension, and in three or four weeks the posterior urethra is practically always invaded. The patient is kept on Silvol injections 4 to 6 times daily, until both germs and discharge are absent, then a medium-sized sound is introduced, and the Corpus Spongiosum is vigorously rubbed with the fingers to iron down its follicles against the sound. Gonococci remaining absent, it is now time for the healing atsringents—zinc, lead, copper.

Infiltrated follicles which resist the ironing out process, may be destroyed by the proper application of silver nitrate, or by the fulgurating electrode. Periurethral abscesses of large size must of course be opened by incision and drainage from the outside. I have encountered two cases with collections of pus the size of a duck's egg. My present case was doubly endowed —one navicular, and a larger near the bulb. He came to me because of acute retention.

Posterior Urethritis and Prostatitis. They are commonly associated, and when this kind of a patient comes to the doctor for a stricture, his ''stricture'' should be put in quotation marks, and put him into a tub of water nearly hotter than he can stand it, which will promptly relax his spasm, and release the retention. Gravity irrigations, and intraurethral instrumentations have no place during the acute inflammatory stage of either anterior or posterior urethritis. In addition to the hot sitz baths, hot rectal irrigations may be employed with the idea of applying a pelvic poultice, but failing to relieve the pain with this, suppositories of opium, belladonna, and icthyol are demanded. The bowels must be kept open and soft. When the acute process has passed, the prostate must be emptied of its contents by means of the expressing finger, and the urethra immediately cleansed with a copious irrigation. Presently the deep instillation of silver nitrate is begun in strengths progressing from ½% to 2% as tolerance is acquired.

In addition to the benefit from drainage of infected secretions, the increased nutrition due to local hyperemia is probably of even greater value. As the expressing finger is borne down upon the prostate it is rendered temporarily anemic by the crowding out of blood, and as soon as the pressure is released it immediately becomes hyperemic from the return circulation with added nutrition. The active hyperemia is carried to the posterior urethra by means of the deep instillation; the inflammatory process subsiding and tolerance to the increasing strengths of silver increasing as a healthier reaction is obtained.

The Keyes syringe is so faulty in design that it is absolutely worthless. This I abandoned several years ago, and in its stead I attach a small Luer to the usual cannula by means of a metal adaptor, having screw threads for cannula and slip fit for syringe. I was using this for several years before the announcement of Neil Moore's device, but as mine is more simple and durable, comprises less hardware, is more efficient and economical, I still maintain its superiority, if not priority in the literature.

Seminal Vesiculitis. If the doctor too often neglects the prostate, he more frequently ignores seminal vesicular involvement as a consequence of urethritis. Koll, of Chicago, reasons from an anatomical basis ''inasmuch as the fascial capsule of the seminal vesicles is a reflection in common with the prostatic sheath, it is impossible to have prostatitis without seminal vesiculitis.'' Though abscess formation is unknown, there may be considerable accumulation of pus (with or without gonococci) which can be emptied by the expressing finger. An acute exacerbation may start perivesicular infiltration, with or without pelvic peritonitis. This will lift the common capsule of the prostate and vesicles as one exquisitely tender mass, and will spread it wide of the median line, so that the palpating finger, introduced into the rectum encounters the tumor almost as a perpendicular wall. Retention of urin is apt to follow, but catheterization is to be avoided. Non-operative treatment is similar to that given for prostatitis. The pathology of the female gonorrheal pelvis has been well understood for a long time, but the above constitutes the male type of gonorrheal pelvis, particular knowledge of which dates from Eugene Fuller's paper in 1893, which was followed by others in 1901 and in 1909, while in June, 1912, at the Atlantic City session of the A. M. A., and after an experience of 254 Seminal Vesiculotomies without a death, he carefully classified the variety of conditions for which the operation may be done into four groups:

1. Beginning his work for the purpose of drainage, and for relief of the urinary symptoms, he next operated some because of 2. Genital or Sexual disturbances, 3. A very few for nervous and mental deviations, while he admits 4. That it was not until his 38th case that he became awake to the fact that it could be employed for the radical cure of toxic or absorptive rheumatism.

This is one of the three great contributions of our time to the surgical treatment of gonorrheal infections, and if there was one strong man in every considerable community skilled in its performance ''the ready-made shots for clap factories would lapse for lack of patronage.'' (Ludvig Hektoen.)

It is interesting that Fuller states as his belief in 1912, that the arthritides were not produced by gonococci at all, but by a streptococcus which followed remotely, sometimes, in the wake of the gonococci, while it was about two years later that E. C. Rosenow (then of Chicago) announced his famous discovery of ''The Selective Affinity of Streptococci for Certain Anatomical Structures.'' Two years ago, overlooking Fuller's work, based directly upon etiology and pathology, I fear that we went over-much to the Belgian orthopedists for Willems to mobilize our gonorrhea symptomatically, as it were.

Epididymitis. While the occurrence of epididymitis is variously given as from 10% to 25%, its rate of incidence will depend much upon the practices of the patient infected, and the doctor in charge. The treatment is nearly always surgical, and the method employed must be practical, relieve pressure, and maintain drainage. The puncture of Baermann (1903), fails to maintain drainage, and is impracticable in multiple abscess formation, as well as in the presence of considerable swelling. The operation of Hagner involves a maximum handling of the tissues in the presence of acute infection, and is far too radical to ever become popular. The vasotomy of Belfield, alone, is insufficient to meet any of the requirements. All three are therefore eliminated by definition.

In May, 1919, James, of Toronto, published his technique which secures direct approach to the structures involved, with a minimal handling of the tissues, thereby causing epididyotomy to become more popular than ever before.

The rational non-operative treatment of epididymitis consists of rest in bed, proper elimination, ice cap to scrotum at first, followed later by the hot-water bag, and correctly supporting the testicles with adhesive plaster. The plaster shelf from thigh to thigh is uncomfortable and a nuisance. The strapping should be in the form of a sling, encircling the scrotum, which is held well up to the pubis, and having either end attached in the neighborhood of the umbilicus. I am in favor of the plastery, greasy, tarry applications so often used, mainly since their apparent object is to fill the patient's mind with utter disgust and abhorrence for the condition which brought him to this treatment of tar and feathers. And if their apparent object is their real basis, they should be consistently applied amongst all the hairs and unkept surroundings generally.

Stricture. Due to a richer blood and lymph supply, the most frequent site for stricture formation is in the bulbous portion, and the next is in the navicular portion of the urethral canal. For therapeutic purposes we may consider that all strictures are of two kinds. The infiltrative stricture, the result of infection, and the traumatic stricture, the result of improper attempts at operative procedure. Formerly, according to the teachings of Otis, urethrotomy was the practice, but for the past three decades the absorptive philosophy of Oberlander, Wossidlo, Valentine and Kohlmann, has completely revolutionized the treatment of stricture, so that now less than 5% of these strictures are cut. The Hume-LeFort outfit will secure entrance primarily to nearly all urethral constrictions, while the systematic induction of hyperemia by the use of sounds gradually increasing in size, will eventually produce the absorption of all strictures of infiltrative origin, more than 95%.

Since this paper was written, the author has been using in place of the Hume-LeFort, the Phillips outfit which is flexible thruout, and is therefore far more gratifying to both patient and operator.

DISCUSSION.

Dr. H. W. E. Walther, New Orleans: A few points as regards the management of urethritis and its complications might be stressed here. First, as regards the drugs to use. Visitors incessantly put the query: What is the latest thing to use in gonorrhea? And we have to reply that there is nothing new that has any value over any of our older remedies. Acriflavine and mercurochrome have both fallen down miserably. Silver nitrate, protein silver salts, zinc, lead, and permanganate of potash are still our mainstays.

Second, as regards handling the individual case. Gentleness will get one further towards success than any other one consideration. This is particularly true in giving injections or irrigations. Again, in the passing of instruments, by employing a sterile, water-soluble lubricant liberally and again using gentleness much unnecessary suffering will be avoided as well as unwelcome complications evaded. For dilating the urethra I have abandoned steel sounds for flexible silk urethral bougies. They serve exactly the same purpose and are by far less traumatising.

Third, Dr. Foster has emphasized again the importance of massage in the treatment of chronic prostatitis and seminal vesiculitis. The general profession have still not fully awakened to the importance of treating these complications as they should. That these structures furnish foci of infection of no mean degree there is no longer a doubt. And unless infection in these structures is completely eliminated the patient may sooner or later become a candidate for chronic invalidism.

Dr. R. W. Faulk, Monroe: In the treatment of gonorrheal urethritis the essayist has well brought out the newest, latest, and best ideas. As a remedy, mercurochrome has certainly given great relief. I was in Johns Hopkins Hospital in the service of Dr. Young at the time they were using mercurochrome and saw the use of it in his clinic in 1919. Just before the literature was given to the **Journal of the A. M. A.** I had a case of chronic urethritis that I failed to relieve before leaving home, and I secured a three ounce bottle of mercurochrome that they were using in the clinic, took it back to Monroe, and used it with beneficial results in my chronic case. So I believe it is one of the best injections we have for gonorrhea, 1-1000 mercurochrome.

Another point in regard to vaccine: I had treated one special case for two years. This man had gone to different physicians. I used the treatment as described, a silver preparation, and irrigations as suggested by Dr. Foster, and this man and his physician had about despaired of getting him cured. At that time I continued to use 1-1000 mercurochrome solution, the patient using it three times a day. Three times a week he came to my office to have his urethra irrigated with 1-4000 permanganate solution, and once a week I would introduce a sound and dilate the urethral canal to 24, and with the aid of Dr. Beale, a laboratory man in St. Francis Hospital, Monroe, I massaged the prostate gland and found much of the trouble was in that gland. With the use of 1-4000 permanganate solution for irrigation purposes and the use of mercurochrome, together with the Lederlede vaccine, which consisted of 13 doses, the patient was entirely cured.

ACUTE ILEO-COLITIS IN INFANCY.*

By M. S. PICARD, M. D., Shreveport.

To read on a subject as Ileo Colitis to assembly of pediatricians would seem like reading a paper on a hackneyed subject, if this was not one of importance to all practitioners for it represents a disease with the highest mortality in infancy. I feel that in North Louisiana where I am located the disease is much more prevalent than in New Orleans or in South Louisiana. In five years' general practice in South Louisiana I have seen fewer cases than are seen by general practitioners of this locality. Fewer cases entered the Charity Hospital at New Orleans during my association than are entered here. Much fewer when you consider the difference in population. There is scarcely a season in which I see less than one hundred cases. Perhaps a factor in the great number is the surrounding oil-fields. An oil-field worker lives under rather poor hygienic conditions, especially if a new field has been opened. A two or three-room house quickly constructed, poorly built, roof covered with tar paper. There is one thing that I can say of the water supply; in establishing camps it is especially good, being condensed water from steam. This is piped in nearly all of the houses; ice as a rule freely available.

The question of heat is much over rated as a causative factor of this disease. It is found principally during the warm months. The cases usually appear about the 15th of April, reach the maximum intensity about the 1st of June, then gradually decline. During the extremely hot month of August, the number of cases decreases materially until about the 1st of September when there is a return but not with the intensity of April or

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*Read before the La. State Medical Society, meeting of April 19 to 21, 1921.

May. It seems to reach its height during the period of changeable weather. Whether the beginning of the warm months lowers the child's resistance, making it more susceptible to the disease is a question. Another factor which is given too much place as a cause is spoiled or decomposed milk. Take the age at which most cases are seen, between the fourteenth and eighteenth month you see the greatest number, the amount of milk taken at this period is very small. In an oil-field camp milk with the exception of condensed and dried milks are unobtainable. The possibilities of this kind of milk spoiling is much less than cow's milk. That milk is only a minor factor in producing a disease is best illustrated in the army, soldiers on a march and active war duty get little milk; water in contradistinction from typhoid plays a very small part in producing the infection.

The more I have observed this condition the more convinced I am that fruits and fresh garden vegetables play a more important role than is usually given them. Among these are new potatoes, the fresh garden peas of different types, the small yellow plum; one of my confreres in an adjoining town calls this plumitis. Spinach and carrots seem to play no part in its causation. There is a possibility that the disease is produced by a carrier in the sense of diphtheria or meningitis. It may be a disease where the immediate host is not recognized. Tracing the origin of different cases is often interesting. I recall a case in a country doctor's child; this doctor attended a case about a third of a mile from his home, a case that occurred in winter which is rather rare. About one week after this case developed the doctor's child showed symptoms of the disease, he was not a carrier in the sense of typhoid through the stools. The house was thoroughly screened, there were no flies and I believe that they play an important part in the conveyance of the infection; either the father was a direct carrier or carried the infection on his hands after examination of the stools. Goppert reports the case of a soldier who was discharged from the army after an acute case of dysentery. He returned home, infected the household, his youngest child, aged four, died from the disease.

The most common bacteria found in the stools are the Shiga Flexner, the bacilli of His, Strong bacilli and the bacilli pyocyanese, gas bacilli, streptococci and staphylococci. Ileo-Colitis is only mildly contagious, it is rare that more than one are infected. I recall one instance where four and in several instances where two or three; twins are the exception.

Pathological lesions are found principally in the large intestines, though at times the small intestines can be slightly involved. There can be a catarrhal infection, at other times superficial ulcerations. In some there is a hyperplasia of the solitary follicle Peyers patches. In some a diphtheritic-like membrane is found involving large areas. The ulcers can be exceedingly numerous. At times the prolapsed anus is a mass of ulcers. The ulceration of dysentery differs from the ulceration found in typhoid, being more rapid in its course. Within the first three days the ulceration is complete; what is seen later is more or less a healing process. This explains why cases dying in a short time can show most marked intestinal changes.

Special Symptoms. Besides local manifestations of toxic nature, evidence of a general toxemia are present as described by Peiser and Usner, symptoms which point to exaggerated activities of thyroid and adrenals. Graef's Sign, infrequency of winking, slight weakness of the rectus internus, dermographism, bright shining eyes, increased sweating and flow of saliva, marked diminution of urine at the beginning of the disease and marked increase during the convalescence. At times striking rapidity and slowing of the pulse. Symptoms pointing to the vagus and sympathetic system. The most important symptom however, is the intoxication that takes place; this can vary from a slight stupor to a complete loss of consciousness. The length of this toxemia varies from a few hours through the whole length of the disease. Some are so overwhelmed that it is thrown off with the greatest difficulty. I recall a case that persisted long after the temperature and stools became normal. However, temperature and toxemia go hand in hand; with the dropping of the temperature to normal, the toxemia clears up. Frequent bowel movements are often more desirable than constipation, as they drain the intestines of these toxins.

Fevers: The height of the temperature at the beginning is as a rule, 102-104 degrees. This lasts about two or three days when it becomes more moderate and continues moderate during the whole course of the disease. A rise in temperature after a protracted course frequently foreordains an early death. The height of a first temperature bears no relation to the mildness or severity of the disease. The fever can commence a short time before the intestinal symptoms arise or within one and a half or two hours after. Variations of temperature are frequent, at times only a slight transitory temperature or no temperature at all. In Goppert's 80 cases, 47 were without temperature from the beginning, other types are protracted temperature which can be only slightly influenced. In this type of temperature the fever is not influenced by the frequency of the bowel movements or a complete emptying of the intestine; this shows the intense hold of the toxins.

Disturbances of the water contents of the body: In the beginning of this condition the loss of weight is greater than a loss in any other intestinal condition. The greatest loss is seen at the beginning but this continues during the whole course of the disease. The visible turgor loss which can also be told by the doughy feeling of the skin is greater than the water loss in the stools. This doughy feeling of the abdominal muscles, almost scleremic, to me is a bad symptom. Few cases of this type recover.

Stools. The characteristics of the dysentery stools are mucus, pus and blood in variable quantities. At the height of the disease stool masses are completely gone or occasionally mixed with mucus. The frequency of the stools stands in no direct relation to the anatomical changes of the intestines. One can say nothing from the severity of the stool picture. Even the frequency is of no consequence. Stool frequency without toxemia is of no consequence. Recoveries with forty to fifty stools are not unusual. I had one child recover whose bowels moved 67 times the first 24 hours. In these cases the toxemia was only slight. Goppert calls attention to a remarkable symptom. If when the stools become normal and constipation exists, a purgative is given it will cause a renewal of the diarrhea. At this point we must be careful of purgatives. Moro has observed that purgatives increase the number of bacteria, an observation which confirms the above statement. How often does one get this history: the child was suffering with diarrhea; a dose of calomel was given, then dysentery stools appeared. Sometimes the character of a stool can be of prognostic value. The first, mucus mixed with food contents, then mucus mixed with blood and pus, then pus alone, then a green-colored mucus, then mucus with fecal contents. The stools can continue 4 or

5 times daily weeks after the child has recovered; in spite of these stools the child rapidly regains its first weight.

A paradoxical condition often appears, the stools decrease in number, become normal in character, the toxemia deepens and the child dies with a normal stool.

Gastric Symptoms. Initial vomiting is frequent. This usually lasts only a few days. The most severe cases are those with uncontrollable vomiting. This vomiting must be looked on as a toxemia. These usually run a rapidly fatal case about 3 or 4 days, some as fast as the second. The appetite sinks to such an extent that the child refuses all food. There is no disease where the child is more irritable. Frequently one has to resort to forced feeding to overcome the danger of gradual starvation.

Urine. The kidneys are rarely involved. During the first one or two days albumen may be present.

Relapse is not frequent. I can only recall one or two cases where it occurred. Negroes seem slightly less susceptible than whites and when it does occur they are most resistant to the disease.

Incubation. Apparently the disease has no incubation. An exact determination is made difficult, for the dysentery bacilli like the diphtheria and the meningococcus only produce symptoms when the resistance is lowered. Kuper observed 5 or 6 days from the time of the infection to appearance of the first symptoms. According to Jochman there is a prodromal stage lasting through the 7 days in which there is apathy, loss of appetite and constipation.

Goppert divides the disease into primary favorable, moderately severe but favorable, cases with protracted course and toxic forms. The slight mixed cases are characterized by one or two days diarrhea. Stools mixed with mucus and blood. This generally follows some indiscretion and quickly passes away. In pronounced cases there are usually one or two days slight diarrhea, then bloody stools. The disease commences mostly at night with high fever, loss of consciousness, then appears the typical stool; vomiting occurs only during the first few hours, but by morning the temperature drops, rarely lasting over one or two days. A good purgative sometimes here prevents further symptoms. The dysentery stool continues 3 or 4 days. Tenesmus usually disappears with a dose of castor oil. If one does not get immediate results with laxatives, then we are dealing with a more severe case.

Cases with protracted fever. While dysentery is associated with moderate temperature, at times we see cases with marked remissions and continuous temperature for 2 or 3 weeks or longer. Great care must be observed in these protracted cases in ordering a starvation diet as collapse and death can occur.

Toxic Type. This is generally ushered in with high temperature, delirium, somnolence, extended to deep stupor or complete unconsciousness. A meningismus may be present. The head rocks continually, the stupor deepens, at times the infant seems to be in a cataleptic state, the pulse rapid, the abdomen retracted, frequent bloody stools, tenesmus, toward the end terminal convulsions. There is scarcely a disease in which death appears so long after the disappearance of the radial pulse. I have seen it go as long as 8 hours.

Primary Malignant Types. Aside from the cases in which not the severity of the disease, but exhaustion and complications lead to death, there are cases which are malignant from the beginning. Death is in all probability due to anatomical changes in the intestine. Fever can be present or it may run its course without temperature. Characteristic for this is apathy, collapse, persistent and uncontrollable vomiting, doughy consistency of the abdominal muscles, paralysis of the sphincter ani, passing of gangrenous shreds. I recall a type of this case which ran its complete course in 2 days, collapse vomiting, unconsciousness from the inception.

Diagnosis. Diagnosis is made from the general symptoms and the type of the stools. Mucous, purulent, bloody stools, colic and tenesmus. Some cases however can run their course without these symptoms being very marked. Other diseases may produce this type of stools as sepsis, grippe and meningitis. I recall a case of measles last winter with diarrhea and bloody stools as a complication in which the number of stools were far greater than any I have seen with dysentery. They occurred at intervals of 3 to 5 minutes, the duration was a week, no toxemia was present. This winter we had an epidemic in which one of the characteristics was bloody stools. There was no tenesmus or toxemia. It was very mild, lasting only 3 or 4 days. None of these children appeared seriously sick.

Differential diagnosis must be made from rectal prolapse, foreign bodies in the rectum and intussusception. In polypus all symptoms except bloody stools are absent; in foreign bodies there is a marked difference between the general symptoms and the desire for stools. Intussusception the blood far exceeds the mucus; both show collapse but invagination does not give the history of the prodromal diarrhea. The presence of a tumor by palpation or per rectum makes the diagnosis.

Prophylais consists in careful watching and overlooking the diet at the time dysentery usually appears. Experience shows that it generally follows gross indiscretions in diet. Care must be taken in eating fruit and green vegetables at this time. Proper care must be taken of excretions to prevent household infections. I do not believe that it is contagious enough to require isolation.

Prognosis. The younger the infant the higher the mortality. Dunn reports the mortality 14.5% in the floating hospital. Flexner and Holt's mortality is 35%. Cases appearing in winter are more fatal than those in the summer.

Therapy. Specific therapy has a few friends and has had no success in my hands. The keynote in the treatment is to keep up the water balance and prevent inanition. I believe as many children die from starvation as from the disease. The habit of prescribing lactose solutions recommended in textbooks is to be deplored. How many children have I seen feed over long periods on rice water, barley water, broths and liquid peptonoids, foods of extremely low caloric value. How many cases have I seen fed by this method whose tolerance for food has sunk so low that assimilative power is gone. A gastric insufficiency develops that makes it intolerant of food. The least increase in food can cause a collapse. According to Goppert long continued hunger instead of causing a decrease in diarrhea causes an increase in diarrhea and intoxication.

Therapy of dysentery begins with a thorough emptying of the intestines. The remedy of election is castor oil. The more I see of the use of Calomel, the more I have become prejudiced against it in the inception of the disease. Calomel in its action produces a mucous stool and this is to be avoided. To derive any benefit of purgation it must be given early. After 3 days little benefit will be derived from them as the intestines then contain little remnants of food and the disease has reached its height. It is of little benefit in an exhausted, starved and dehydrated child. A tablespoonful is given. This is given in spite of vomiting as it is of toxic nature and taste has no influence in aggravating it. All efforts must be taken to keep up the water balance. The presence of stupor or unconsciousness is no contra indication. The habit of giving a child water by the dropper or the teaspoon in this condition is too uncertain. The time spent in its administration is too exhausting on a child. Water in large quantities is administered through the nasal tube. It is wonderful at times how quickly the toxemia will clear up and the turgor increase. If vomiting is present, one or two stomach washings may help. If vomiting is of uncontrollable nature, saline solution is given intraperitoneally. I am sure that I have saved a few almost hopeless cases by this method. Normal saline or 5 to 10% glucose solutions can be used, 8 to 12 ounces, even more can be given, depending on the age of the child. I have never seen any harmful effects from the use except we too frequently have the tendency to wait too late. I have no experience in giving fluids through the longitudinal sinus, nor would I elect it as the amount introduced would be too small to be of material benefit. If the child is nervous and restless chloral and bromides are given. Drugs are of no value in shortening the course or modifying the type of the disease. I have never seen the least benefit derived from any. I have abandoned the use of opium as I feel that its use is harmful, it prevents free drainage by inhibiting peristalsis, causing an increase in the absorption of toxins, nor do I use it to prevent tenesmus or prevent colic. I have long since abandoned the use of irrigation, aside from flushing the first day; I have found it of no benefit and in my experience keeps up the tenesmus.

Since I have abandoned the use of irrigation I have scarcely had to treat the tenesmus for without the use of rectal irrigation it usually disappears about the third or fouth day; even the taking of the temperature by rectum can increase the tenesmus. Anyone who has stood by the bedside and watched the nurse take temperature by rectum will see its irritating effects. I have seen the rectum prolapse by this slight irritation. Water by proctoclysis on account of this irritation should never be given. Any way it is futile as the rectum will not tolerate a tube at all.

Dietetic Treatment. I have before mentioned the principal object of treatment is to prevent starvation. I treat this condition as typhoid, using forced feeding if necessary. A too long starvation or one sided food makes the condition worse, increasing the toxin. Milk in any form is harmful. I have not found clinically, to quote from Morse and Talbort text-books, that the dysentery bacilli, streptococcus and the colon bacilli belong to a class of facultative bacteria. This class of bacteria can thrive on either carbohydrates or protein media, they produce harmless products from carbohydrate and toxic from protein. Clinical experience demonstrates that protein is harmless.

When first commencing to treat this disease after a few disastrous cases I came to the conclusion that breast milk being the ideal food was the best method of treatment. My mortality under this method was greater than any of the other previous ones. It took me over a year to discover that it was breast milk that was doing it. In going through statistics reported by other pediatricians found this also to be true, but was not observed by them. If a child is fed on the breast I immediately take him off of mother's milk, cocoa seems to have a special affinity and curative action on the lower intestines. I use a method of feeding recommended by Myer. The child is fed every four hours. At 6 o'clock Cocoa; 10 o'clock, Cocoa and junket; 2 o'clock, broth and scraped beef; 6 o'clock, cocoa and junket; 10 o'clock, cocoa.

In 24 hours one can see the effect of cocoa on the character of the stool. It commences to show semi-solid fecal contents. Of course there are many bad ones, but the type has changed. On the 3rd or 4th day toast and egg are given. This is a proteid diet of high caloric value. The cocoa is made with water, a teaspoonful to the cup of water, sweetened with saccharin; at the end of a week, potatoes and baked apples are added. A favorite way of treating this in Germany is by the whey method of Frank: first day 5 feedings, 50 grams of whey and 50 grams of barley water; second day, 60 grams whey and 60 grams of barley water; third day, 75 grams whey and 75 barley water, then gradually increase. At the end of the 5th or the 8th day a teaspoon of whey is replaced by one of milk and this is gradually increased. At the end of the 14th day, 400 grams of milk, 400 grams of oatmeal water and 200 grams of broth are given. The disadvantage of this method is that a caloric poor diet is given and a danger from starvation.

DISCUSSION.

Dr. J. A. Storck, New Orleans: I believe most cases of the character described and met with are due to infection by the bacillus of Shiga or bacillus coli communis. It has been said that one-fifth of the flies in our public market are infected in that way and act as carriers. I have seen quite a number of these cases with the usual onset as described by Dr. Picard. I have seen the temperature run up to 105 and last for 12 hours. I presume most of this audience are acquainted with this trouble.

I have but a few words to say in regard to the treatment. For a long time I used 1-10,000 bichlorid through a recurrent catheter. I don't believe the antiseptic has much to do with it, but the condition often clears up quickly. Recently I have been using normal salt solution. The suggestion made by Buchanan proves most valuable. That is to use frequent small doses of magnesium sulphate, or sodium sulphate, every four or five hours, and an occasional dose of castor oil until the stools are free of blood and mucus. When the condition was not epidemic, I have seldom found a case to be fatal. It is true, in some cases the organism seems to assume a more pathogenic character and when this is true or when the patient is below par, many fatalities occur. Dr. Duval recently examined a specimen of feces for me in which he found the Shiga organism. In that particular case the response was very rapid to this form of medication.

Dr. J. Ross Snyder, Birmingham, Ala.: I quite agree with the essayist that these cases of ileo-colitis are more common in children past the first year. I believe the vast majority of these cases are due not to food **per se** or to contaminated food, but they are mouthborne in their origin. Children get hold of things that are not meant for food, foreign objects.

Babies crawling over the floor often pick up things; that is the usual thing for them to do, and they put into their mouths anything they can find, such as tacks, and even up to phonograph records. I think that the injury produced by the foreign body simply fertilizes the intestinal tract for the specific organism, which is usually Shiga or Flexner bacillus. The trauma produced there invites it.

As to the treatment of ileo-colitis, I think there are several things to do, one of which is to clear out the intestinal tract first and put it at rest. I don't believe in daily irrigations nor the daily administration of purgatives or laxatives. I think what that intestinal tract needs is rest, and nothing will give it to you so well as opiates, and I think the child should have enough opiate to do it some good, not three drops of paregoric every two or three hours but enough to control the peristalsis. Then we should keep out of that intestinal tract anything that will further irritate it until the child has sufficiently recovered, permitting an abundance of water as the doctor suggests, and the vast majority of these cases will get well. But remember that bismuth is not indicated. Bismuth, if it clings to the intestinal tract, has to be administered in enormous and oft-repeated doses. If so administered, and given alone, it may further stimulate peristalsis. A bolus of it alone going along the intestinal tract will interfere with healing.

Food sticks to the intestinal tract, and you will get absorption of toxic material and debris that ought to come away. I would condemn most strongly the administration of bismuth in acute ileo-colitis.

Dr. M. S. Picard, Shreveport (closing): In regard to foreign bodies, I would like to say a few words. I have had occasion to see cases, but I do not recall any children who ate dirt who were subjects of ileo-colitis. In cases in which there is any vomiting, water should be given by the nose. I know of a few cases that have been saved by the intraperitoneal injection of normal saline solution or 5/10 per cent. of glucose solution.

RECENT PROGRESS IN OPHTHALMOLOGY.*

By DR. CHAS. A. BAHN, New Orleans.

Introduction.—The purpose of this paper is a brief and simple review of a few of the many ophthalmic advances presented in perhaps a different arrangement from that in which they have been read by you in the recent literature; also to obtain your views on at least some of the many mooted questions, which will probably always be of interest to ophthalmologists, and to assist in their better understanding.

Literature and Teaching. Due to the high cost of production, associated with decreased research caused by the war, comparatively few new ophthalmic books have appeared in the past several years. The American Encyclopedia of Ophthalmology begun in 1913 and continued without interruption, is now nearing completion and is the largest and perhaps most complete work of its kind yet published. New editions of the text books of DeSchweinitz, in a much improved form, as well as those of Axenfeld and Roemer, have recently been published. A new English text book, "Clinical Ophthalmology for the General Practitioner," by Ramsay, is well arranged and tersely written. Among the recent books on special subjects, are War Atlases by Lagrange and by Von Szilly; "Syphilis and the Eye", by Igersheimer; "Sympathetic Eye Diseases", by Peters, and "Tropical Ophthalmology", by Elliott. In the realm of periodicals many changes have occurred. As a result of amalgamations the new British and the new American Journals of Ophthalmology have arisen, the latter probably having the largest circulation of any ophthalmic publication in existence. The German Zentralblatt, begun in 1914, has been enlarged and now includes Nagel's Yahresbericht, which for many years played an important part in European Ophthalmic literature. The Ophthalmic Year Book is now continued as a supplement of the American Journal of Ophthalmology under the title of "Ophthalmic Literature." The American Institute of Medicine is publishing an Eye, Ear, Nose and Throat Section somewhat similar to the German Zentralblatt.

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It is with interest that one notes the present tendency to study ophthalmology from the unit of the subjective and objective symptom rather than from that of the individual disease, also the increased importance placed on routine systematic examination as shown in the recent writings of Foster, Loeb and Ramsay. These factors will probably have a prominent influence on the arrangement of future text-books and the character of future teaching methods. To the American Board of Ophthalmic examiners and the Committee on Post Graduate Teaching in Ophthalmology of the A. M. A., much credit is due for efforts in creating a standard of competency and striving towards its adoption and enforcement.

Post-graduate teaching is undergoing the same evolution through which under-graduate medicine has passed in years gone by: longer, more elaborate and systematized training, didactic, clinical, and laboratory. Short intensive courses under the auspices of medical associations and the large teaching institutions, given at regular intervals, will meet the needs of practicing ophthalmologists desiring a short review of recent advances.

Diagnosis. Though too large, cumbersome and unwieldly for routine clinic and office use, the large Gullstrand Ophthalmoscope affords, with a magnification of from 15 to 50 diameters, practically the most distinct and detailed view of the fundus yet obtained. With the addition of the red-free light of Vogt and the adaptation of the Nernst slit lamp to the corneal microscope, permitting the microscopic study of the living eye; new fields of investigation, already productive of important information, have been opened and are fraught with great future possibilities. The small electric ophthalmoscope of May seems to afford the clearest view of the fundus with the greatest illumination and least reflex.

The Schiotz tonometer appears to be the most accurate instrument of its kind, although several modifications and newer instruments have been placed on the market. Combined with the Bailliard dynamometer, interesting observations have been made concerning the pressure in the retinal arteries, veins and capillaries.

Pathology. Even though many of the details are not clearly understood, our increasing knowledge of focal infections forms one of the most important advances in modern medicine. That certain eye diseases, especially those of the uveal tract are intimately connected with and most probably caused by inflammations elsewhere in the body there can be little doubt. The most frequent locations of these conditions which may directly or indirectly affect the eyes are the teeth, faucial and pharyngeal tonsils, intestinal tract, including the Peyer's Patches, the appendix and gall-bladder; the urethra; female pelvic organs; conjunctivæ; skin and respiratory tract. Whether or not the eye becomes involved as the result of chemical irritation, either metabolic or bacterial, disseminated through the lymph or blood stream, or is the result of an actual transference of the specific organism to that part of the eye involved is far from clear in all cases. In the choroid for example, comparatively free from trauma, the focal character of its lesions of this type, and its very limited and slow lymphatic circulation, as well as the actual finding of specific organisms in certain cases, make the latter theory more probable. The mode, manner and time of transmission; the specific organisms involved, and the relation of the severity of the ocular affection to that of the associated lesion elsewhere and the many contributing factors connected therewith are among interesting subjects which have yet to be worked out. In the study of primary glaucoma we still do not know whether the basic cause is an increased inflow or decreased outflow of intra-ocular fluid, nor is the location of primary causative lesions certain. I believe that in years to come, what is now called primary glaucoma will be separated into several definite entities having very little connection with each other except for the increased intra-ocular tension. Widely diverging theories concerning sympathetic ophthalmia are our nearest approach to a knowledge of its real cause. It is an interesting fact however, that during the first part of the war, practically no cases were reported and during the latter part and even up to this time the number reported is much smaller than would have been expected under the conditions which existed. Has this been due to the character of the wounds received, prompt enucleation, the physical condition of the combatants or other causes?

Another interesting fact brought out by the war was that Idiopathic Hermeralopia caused by the war did not exist; that is, the cases were either night blind prior to military service or that chorio-retinal lesions, errors of refractions, etc., were causative factors.

The study of hypophyseal, thyroid, and other endocrine diseases and their effects on the eyes open a comparatively new field which though still experimental apparently affords many possibilities.

Surgery. That the Elliot operation for glaucoma is an advance there can be little doubt, notwithstanding that the enthusiasm with which it was first greeted has somewhat subsided, due to a greater knowledge of its indications and limitations, in that the filtration has ceased in some cases, also that later secondary infections have occasionally resulted. The classical Graefe iridectomy apparently continues to be the operation of choice in inflammatory glaucoma, while the filtration type, of which the Elliott, Lagrange, etc., are examples, is apparently best suited to non-inflammatory cases.

The best method of cataract extraction continues to be a lively topic of discussion. Intra-capsular extractions though theoretically an advance have not met the adoption of a great, part of the ophthalmic world. I for one, doubt whether, generally speaking, the difficulty of technique and increased loss of vitreous is justified from the standpoint of the patient by the occasional slightly improved vision and decreased number of secondary discissions. The conjunctival bridge instead of a flap, though slightly increasing the difficulty of technique, certainly reduces the risk of vitreous loss. Our nearest theoretical approach to the ideal cataract extraction will probably be a simple intra-capsular bridge operation, but the simple and safe technique for accomplishing this has yet to be perfected.

With the possible exception of the Gillies tube flap our recent military work on plastic surgery of the lids has been more advances of refinement than of any change in the basic principles.

Military service offered unparalelled observation for the study of enucleation; the best method, and the after results. I thoroughly agree with Dr. Feingold who stated that the basic question is not so much whether or not Tenon's capsule or the muscles, or the conjunctiva is sutured, but whether or not the orbital tissues have been traumatized. If so, a poorly fitted prothesis will probably be the outcome, irrespective of the operation performed, and if not, the prothesis will probably be cosmetically good irrespective of which of the accepted operations has been performed. This is proven by the fact that the same good and the same poor results have been obtained by hundreds of surgeons on thousands of patients by scores of different operations.

Substitutes for enucleation continue to be suggested from time to time.

The introduction of foreign substances in Tenon's capsule for cosmetic improvement may undergo four courses: absorbtion, extrusion, encapsulation or vascularization. Of the latter, which offers the greatest hope of success, is fat, cartilage, facia lata, and the tendo Achilles of the ox, some of these preserved in formalin or alcohol.

Therapeutics. With the exception of diphtheria, the therapeutic use of specific and non-specific proteids do not seem to have met the expectations of the many, notwithstanding the enthusiastic reports of the few, and therefore may be still classed as experimental. The wide difference of opinion which exists, may be due to a general lack of accurate knowledge of the exact indications, dosage and technique or to the enthusiasm of certain observers, associated with the fact that perhaps the same result might have been obtained without any or with other treatment.

The results reported following the use of radium and the X-ray in the treatment of superficial and deep malignancies of the eye have on the whole been favorable, and its continued trial is indicated notwithstanding its somewhat disappointing results in retinal glioma.

Specific endocrine medication such as thyroid, pituitary, corpus luteum, etc., are, so far as the eye is concerned, apparently still in the experimental stage; however, favorable results have been reported especially in uveal diseases by certain observers.

We continue to search for the ideal conjunctival antiseptic which is not irritating and yet would destroy specific or the general flora of the conjunctiva. Many have gone, and others have come, only to follow them into oblivion. The most recent and popular drugs of this type are: optochin, dichoramin, flavin and mercurochrome. How long their use will remain in favor can not be foretold. The great dilution of any watery solution by the tears, especially in inflamed eyes, to infinitesimal proportions within a very few moments, leads one to believe that the nearest approach to an ideal conjunctival antiseptic will be in the form of an ointment possibly with a vegetable base, or in the form of a slowly dissolving powder.

Sub-conjunctival medication of various kinds is still receiving favorable comment in the reports of certain members of the French school.

The treatment of cataract continues to be surgical, and the one best treatment of trachoma continues to offer a wide divergence of opinion, which may possibly be explained by the different character of the disease in different localities.

Refraction. The trend of today is toward standardization, accuracy, and refinement in testing methods. The best, easiest and quickest way to determine the most beneficial and comfortable glass is far from settled; also the necessity of the routine use of a cycloplegic, and the most desirable one from the standpoint of the examiner and the patient. By the use of definite strength test units for definite visions, and a routine method of testing which eliminates all possible lens combinations except the one best vision lens usually attainable in about three minutes with an approximate retinoscopy, much time and patience is saved the examiner and better and quicker results are obtained for the patient. The necessity of a cycloplegic properly used for the routine determination of the basic or practically unvarying refractive power of the eye, and from which the prescription for glasses is but a modification in the vast majority of cases, existed in about 70% of the series of unselected cases examined by me with and without cycloplegic to determine this point. By this I mean that it would have been practically impossible to have estimated the spherical and especially the cylindrical correction with any degree of accuracy without having previously employed a cycloplegic. The retinoscope continues to be the most satisfactory objective refraction test for routine use. The ideal electric instrument for that purpose has yet to be perfected.

For practical purposes the routine use of the ophthalmometer is not justified by the information it affords, though in exceptional cases, such as conical cornea, irregular astigmatism, etc., it may be marked of service. I have not been able to get a practical approximation of axis and amount of the cylindrical error in 35% of unselected cases and either in more than 60% of cases. The use of the instrument for the theoretical purposes is another question.

Conclusion. It has been my desire in the foregoing to separate, as far as possible, that which in my opinion has, after a fair trial by the profession been accepted, from that which is still in the process of scientific experimentation rather than practical use.

Medicine will probably never be an exact science, but our advances in that direction must come as the result of accurate observation and intelligent experimentation. In our enthusiasm to aid suffering humanity we have often accepted fact for fancy to the occasional benefit of its advocate and to our later disappointment. I sincerely hope my efforts may result in aiding you to further investigate that which is worthy of consideration and to avoid that which in the present form does not apparently justify further practical trial at this time.

SOME INTERESTING GASTRO-INTESTINAL CASES.*

By L. W. FORTIER, M. D., and T. T. GATELY, M. D., New Orleans.

The first case we wish to bring before you is one of a Diverticulum of the Duodenum, second portion. Case has so completely covered this subject in his recent article in the *Journal of the A. M. A.* that we will do little more than report the case. A repetition of some of the important points, however, may not be amiss.

No cases were diagnosed by the X--ray before 1912. They were seen either at operations or autopsies. That they are more common than ordinarily supposed, however, is shown by Case's statistics. Out of 6847 Gastro-Intestinal examinations, 85 diverticula of the duodenum were found. Of these 17 were of the 1st portion, 49 of the second and 19 of the third portion of the duodenum. Other cases were reported by Forssel and

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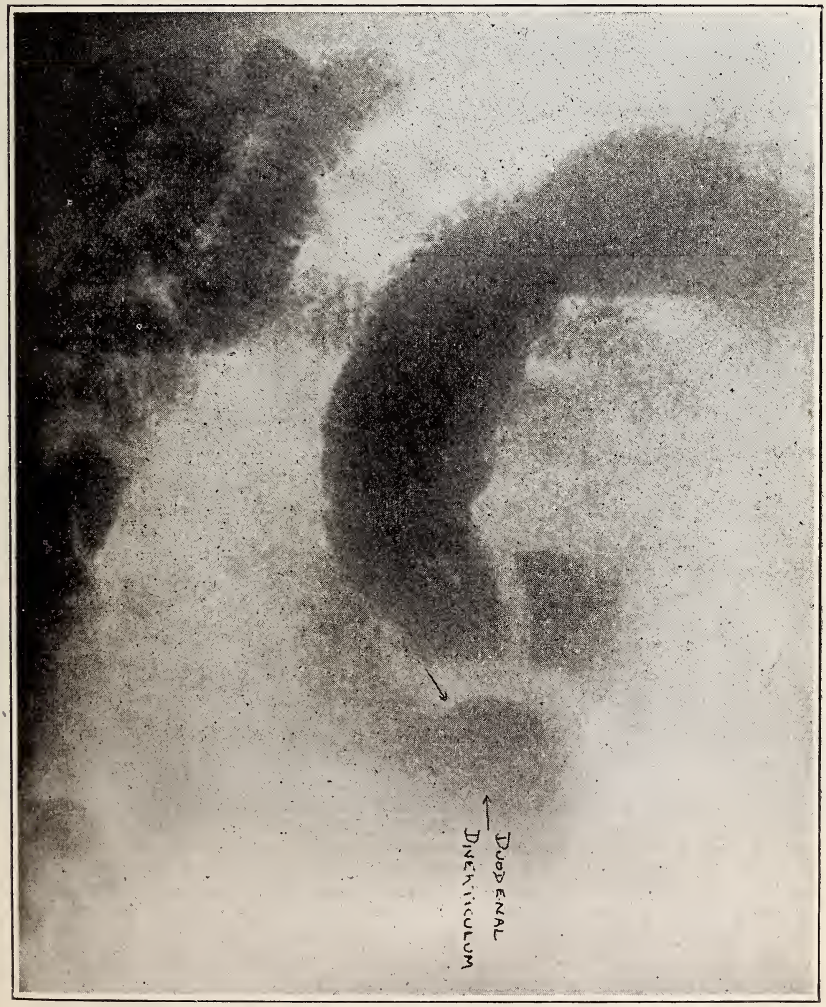
Key, Rosch, Stewart, Ritchie and McWhorter, Buchman, Roberts and Cole and others. They are more common in people over fifty years of age and give no definite symptoms, being diagnosed only by roentgen examination. In looking for them Case has the patient lie on the right side and makes pressure at the duodeno-jejunal junction at the same time milking the meal toward the pylorus. Maintaining the pressure he turns the patient on his back, creating an artificial duodenal obstruction and filling out the diverticulum. A change of position may bring the diverticulum into better view. Barium may



remain in the sac for days after the examination. The treatment of most of the cases is surgical unless the sac is imbedded into the pancreas. Amputations and invaginations are advised.

Our case was referred by Dr. J. Hebert. White, female, age sixty-one. Sick for years with indigestion, becoming more severe of late. She had pain over epigastrium and excessive gaseous distension. Appetite poor. The epigastric pain had no relation to her meals. She had periods of remission when she felt well.

Examination showed her stomach is normal position, normal in outline and tonicity. Duodenal cap showed no deformity. A small sac, evidently a diverticulum, was seen to the inner side of the 2nd portion of the duodenum. The pouch remained throughout the examination. The appendix was seen to be kinked and running toward the median line. Tender on pressure. Twenty-four hour ileal stasis was observed.

X-ray Diagnosis: Diverticulum of the duodenum, second portion. Chronic appendicitis.

The patient did not undergo operation but there is little doubt about the diagnosis.

Our next case is a complete transposition of the thoracic and abdominal viscera. While this condition is not exceedingly rare, the previous surgical history of this case makes it worthy of report. F. T., female, age 8, referred to Hotel Dieu by Drs. Souchon and De Nux. Operated one year previous for typical attack of acute appendicitis with right sided pain. The operating surgeon made the classical incision but was unable to find the appendix. A tube drain was left in the right iliac fossa. Four months previous to our examination, she had an identical attack. On examination dextra cordia was noted. The cardiac end of the stomach was on the right side, the stomach and duodenum being otherwise noted. At the six hour examination the caecum was seen filled on the left side. A large curled appendix, tender on pressure was noted. The appendix could be straightened on pressure but would not return to its former shape.

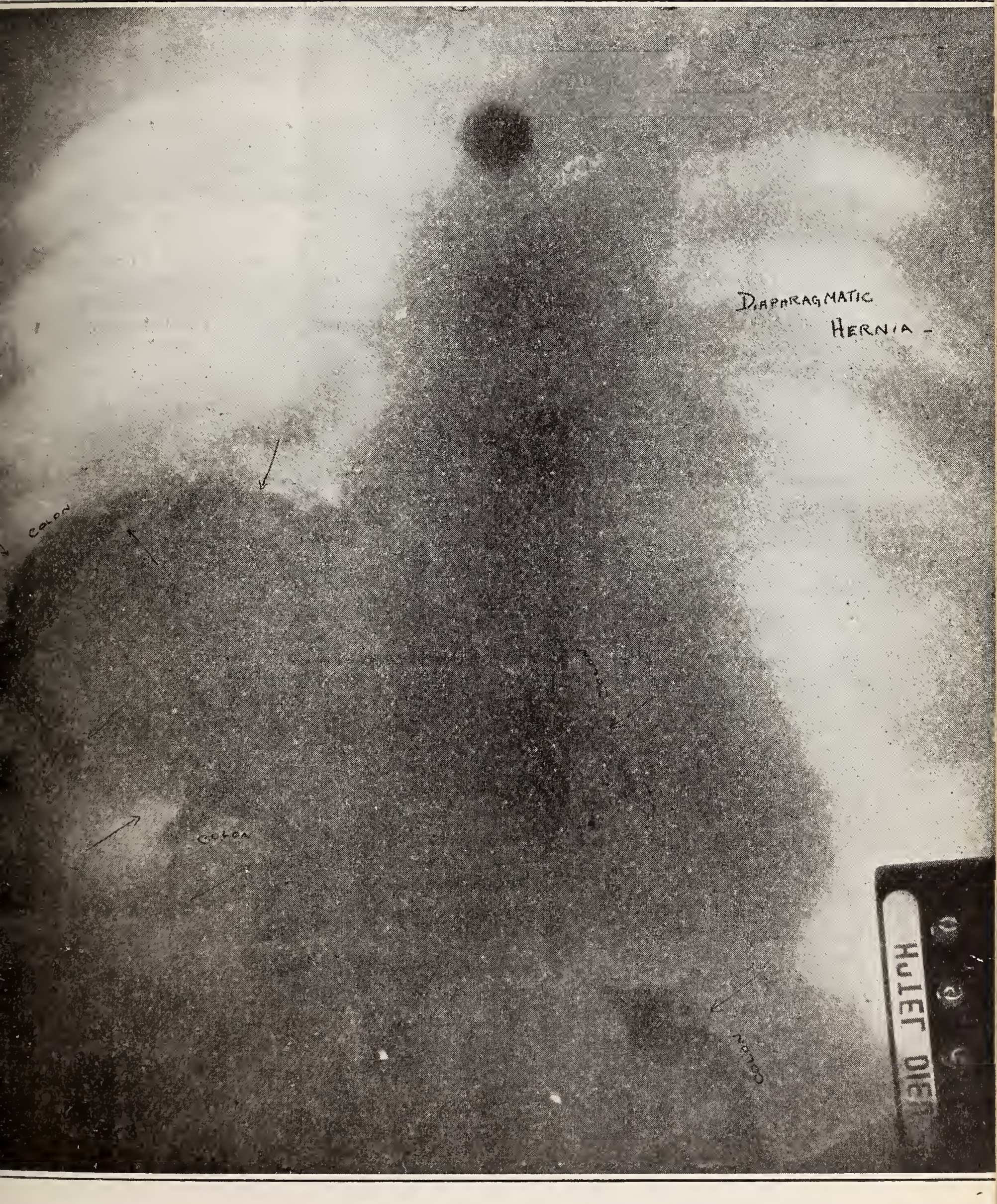
Roentgen Diagnosis: Complete transposition of thoracic and abdominal viscera. Chronic appendicitis.

Further surgical intervention was refused by the family.

While there have been numerous reports of hernias of the left side of the diaphragm, particularly during the European War, comparatively few right sided hernias have been noted.

Mrs. J. H., age fifty-eight, referred to Hotel Dieu by Dr. Chas. Borey. Complaint: Indefinite pains in the abdomen with indigestion at irregular intervals. Only at rare times were her symptoms severe enough to cause her to remain in bed. (It may be noted here that hernias of the diaphragm do not give any definite symptoms, or very large hernias have been noted with practically no disability of the patient.) On routine examination of the chest the right diaphragm was irregular and there was a marked irregular increase of density in the right lower chest. Barium meal showed the pyloric end markedly deformed and pulled upward and to the left. The duodenal was normal in outline and pointed sharply downward. Accumulations of gas were seen above the right liver border, a characteristic sign of diaphragmatic hernia.

At the twenty-four hour examination the transverse colon instead of taking its usual course enters the thoracic cavity to the right of the vertebral column, extends to the level fourth rib an-



teriorly crosses over and reenters the abdomen to the left of the vertebrae. The transverse colon was spastic. The character of the gaseous shadows are such as to indicate that the stomach at times is herniated also.

Roentgen Diagnosis: Hernia of the diaphragm, right sided.

In view of the age of the patient and the moderate severity of her symptoms, no interference was advised.

DISCUSSION.

Dr. S. C. Barrow, Shreveport: The doctors' three cases are especially interesting and well reported, and the second case particularly I believe was one of transposition of the viscera. In conjunction with the discussion of that case I would like to mention the fact that transposition of viscera is more common than is ordinarily considered. It was our experience to find five cases during our service on the Medical Advisory Board during the war, and I have found two cases since. One case was the brother of a physician of whom we were making some examinations, but we found a complete transposition of all viscera. The man was a substandard physique, and about a year later this young man developed an acute pain in the left side. Fortunately for him his brother was a physician, and the doctor to whom he was referred knew the circumstances by his being right next to my office. If symptoms had developed in the right side, it would have been considered a classical case of appendicitis. The doctor knowing the circumstances and knowing that his colon was transposed concluded of course naturally he had acute appendicitis. He was operated on, and fortunately so, as it was found he was just operated at the right time. Had it not been for the fact that his viscera were known to be transposed, there may have been some delay and we might have lost him.

Dr. L. J. Menville, New Orleans: I had the fortune of being able to see a skiagraph of the particular case of diverticulum of the duodenum of Drs. Fortier and Gately, and to my mind, from the appearance of the skiagraphic plate, there is no question as to the pathology present. I think it was Dr. Forsell of the University of Stockholm who in 1915 was the first man to make a diagnosis of diverticula of the duodenum with the X-ray, and Case also states that the diagnosis of diverticulum of the duodenum can hardly be made other than with the fluoroscope or skiagraphic examination, aside from operative interference.

I want to substantiate the doctor's diagnosis, inasmuch as I have had the privilege of seeing the skiagraph and it is a clear case of diverticulum of the duodenum.

Dr. L. A. Fortier, New Orleans (closing): I wish to thank the gentlemen for discussing my paper. I have nothing further to add except to show some slides.

THE TREATMENT OF ANTE-PARTUM HEMORRHAGE.*

By DR. J. C. GREMILLION, Alexandria.

The occurrence of hemorrhage before confinement is generally attended with such grave consequences and brings so much anxiety to all those concerned with the outcome of these cases, that I felt it proper to bring the subject before you today for discussion. The more we interchange ideas upon the treatment of this condition the better we will be able to meet these formidable cases in private practice.

The popularity that Cesarean section has attained lately in the relief of these women, has caused great many men to hesitate to use other remedial measures and thereby subjected many women to very serious operative and post-operative risks. The statistics which have been collected shows that four per cent of all cases of Cesarean section suffer from ruptured uterus during their pregnancies and subsequent confinements. And in the event that we should have a strong and perfect scar we have ever hanging over our head the Damocletian sword that it may rupture.

We are not especially interested in the patient who flows only a small amount and who will get better with rest and a few doses of morphine. The cases which we wish to discuss are those who have a hemorrhage sufficiently profuse to jeopardize her life, or if the flow should recur we would be extremely worried about the outcome of the case.

The *sine qua non* to the successful treatment of these cases is to make a complete diagnosis. Not only with regard to the source of the hemorrhage, but as to the functional capacity of the kidneys. Because we are liable to be confronted with the toxemic cases, which require very gentle handling and a minimum amount of traumatism. If the condition is such that we cannot arrive at a diagnosis without an anesthetic, we must not hesitate to give ether. Plugging the vagina, pituitrin and an abdominal binder will control a great many of these hemorrhages. In plugging the vagina, we must practice all the aseptic precautions that we use in an abdominal section. If these measures do not excite uterine contraction and thereby check the flow, the patient should be surrounded with the best hospital environments and dilatation effected and the uterus emptied.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

In our anxiety to empty the uterus, we should avoid *accouchement forcé* which by tearing the cervix may increase the hemorrhage. The treatment first adopted by Maurer in 1887 finds its ideal indication here. The rubber bag not only dilates the uterus, stimulates uterine contractions, but also exerts pressure on the placenta if it is of marginal implantation. In using the rubber bag we must be careful not to exert a greater amount of force than two or three pounds and this pull must be intermittent, otherwise the cervix becomes very anemic and tears easily. The patient with the rubber bag must be under constant surveillance because the bag may pass the os and become arrested in the vagina and thereby cause a large accumulation of blood back of the bag, which may not show at the vulva. As soon as dilatation is complete either forceps must be applied or podalic version performed, depending upon the presentation and the engagement of the head. An abdominal binder will often be of great help in holding the head against the cervix until delivery can be effected.

In the primi-para and even in the multi-para when the cervix is closed and the child has reached viability, I believe we should be jeopardizing the life of the child and mother not to perform Cesarean section. The risk in waiting to get a cervix sufficiently patulous to either turn or apply forceps is too great compared to the low mortality attending Cesarean section to justify us in adopting the policy of waiting for dilatation to take place. Of course, if the child is not viable and we are anxious to get a living child, it may be proper to wait provided we can surround the patient with all the conveniences of a modern hospital, where she can get immediate operative relief in the event that the hemorrhage should occur. The rule that every case of placenta previa with bleeding should be delivered as quickly as possible without inflicting a dangerous amount of traumatism to the mother, applies to all cases with very few exceptions.

The cases who flow and show a relaxed uterus which will not contract under pituitrin and a vaginal plug, should be subjected to Cesarean section as quickly as the necessary preparations can be made.

The final results as to the advisability of bringing all these cases to Cesarean section will depend a great deal whether we can place complete reliance on the uterine scar. The statistics that have been collected makes the obstetrician very apprehensive when his Cesarean section cases become pregnant again. The amount of blood that a patient may lose should not deter us from operating if we think it necessary, because with the aid of infusion and transfusion these cases can be brought from an extreme state of collapse to a happy termination, as we have so often happily experienced in ectopic gestation.

DISCUSSION.

Dr. P. B. Salatich, New Orleans: In these cases we never can decide as to how much separation of the placenta we have by the amount of hemorrhage. I had a case in which the woman was in extremis and the child dead. If it were not a question of saving life, I would have tried to bring on delivery in a normal way. As the woman was almost exsanguinated, and labor had not commenced I performed Cesarean section. Of course, the baby was dead, but the woman made an uneventful recovery. In these cases it depends whether labor has come on, or whether the woman has entered labor yet. The thing to do is to try and make a careful examination to determine whether you can detect fetal heart sounds and gauge whether the child is about to die or not, as the heart is fast and feeble; in a case like that you can resort to Cesarean section if the patient is anxious to have a live child. If you find the hemorrhage is not great and the child is dead, then I think we ought to try to imitate nature by bringing on labor in a normal way, and the bag the doctor speaks of I have used several times; the first time a man uses the bag, he finds it difficult to get it to stay. You can introduce it with sponge holders, and start pumping it up, before you remove the forceps or you will have to do it two or three times before you can make it stay. I introduce a volsellum in the anterior lip of the cervix, and that steadies it; with round dilators we can gradually dilate the cervix and try to push the finger up and see whether you can push the head easier to one side or the other. It has been my experience that you can push the head to the left side and introduce the bag and it is necessary to have two people to do it. With your finger and the bag caught with sponge-holder you push it up and start the water flowing before you take the sponge-holder off, and the first thing to do is to find out how many bulbs it takes to fill the syringe, so that you will not have too much pressure. You introduce one bulb and take the sponge forceps off and hold the bag as hard as you can and let that gradually force fluid in until you find the bag remains. After the bag is in, you will assist delivery by tying a string around the bag with weight of one or two pounds hanging over the bed, having constant traction on the bag.

Dr. E. H. Walet, New Orleans: We realize the importance of the condition brought up for discussion. The measures the essayist advocated are those which I think are uppermost in our minds.

There is only one thing I want to add. I have sometimes found that careful digital dilation accomplished in some cases just as much good as artificial dilators. Of course, that requires the same practice and the same precautions as the proper application of the bag itself. I find by persistent efforts in these cases the cervix is dilatable. I am not referring to the case that is not dilatable either from the use of a bag or any other artifice. But there are some cases we recognize as dilatable, and you can accomplish a great deal with your digital dilatation. Insert two fingers first, and subsequently three, and so on. If the patient is about to be delivered and you have made up your mind that an anesthetic is indicated, you begin your anesthetic and use other measures to promote contractions, pituitrin or otherwise, and then you go on with the dilation. You can accomplish a great deal by the successive introduction of one or two fingers until you get your hand in. If you have not a strong hand you can exchange it, right or left and be sure it is well lubricated. Without lubrication or rubber glove your efforts will not be satisfactory.

Dr. M. J. Gelpi, New Orleans: The question of Cesarean section in hemorrhage from placenta previa is an important one. When it comes to the question of decision, it seems to me the location of the placenta has a great deal to do with the determination as to whether or not you are going to do Cesarean section. If the placenta is marginal, I think some of the other measures recommended by Dr. Gremillion are correct. If the placenta is frankly occluding, I believe Cesarean section is clearly indicated. I don't know what the experience of the majority of men is in this connection, but personally I have never seen cases of frank, complete placenta previa handled either without death to the mother, without Cesarean section, or handled in such a way that her life is greatly jeopardized whether she survives the procedure or not.

So I think the indication is complete. The dangers to the mother and fetus are distinctly lessened by Cesarean section.

Dr. H. W. Kostmayer, New Orleans: Dr. Salatich brought up a subject worthy of comment when he elected Cesarean section in a case of hemorrhage, knowing he was dealing with a dead child. Even in a primipara I cannot find that it is justifiable. I have never yet found a condition other than rupture of the uterus that would justify me in opening the abdomen in the presence of a dead fetus. I believe that measures can always be found to control hemorrhage. If the child is dead, the control of hemorrhage is the only indication. The hemorrhage can be controlled in a case of central placenta previa. The placenta can be ruptured and the part pulled down. In cases of marginal placenta you can do version and pull down the part. In a dead fetus there is no indication for Cesarean section. In complete central placenta, with a good deal of hemorrhage and a living fetus, the treatment that gives the best results is Cesarean section.

Dr. J. C. Gremillion, Alexandria (closing): In central placenta previa, if we have complete dilatation of the cervix, we can often effect delivery without Cesarean section. If the cervix is not immediately dilatable, then I would recommend Cesarean section, but if the cervix is dilated, you can pass your hand through the placenta and turn and effect delivery without Cesarean section.

SURGERY OF THE BILIARY TRACT.*

By DR. J. A. DANNA, New Orleans.

The surgery of the biliary tract is of comparatively recent development. In my own student and interne days gall bladder operations were practically unknown. We occasionally stumbled across gall bladder cases which sometimes we recognized and sometimes we didn't. I remember a patient who was operated on with a diagnosis of abscess of the liver. Pus had been drawn through the exploring needle. An incision was made through the liver tissue, through which a quantity of purulent material was discharged, and a tube drain inserted. The next day pure bile began to drain through the tube and kept up so long as the tube was left in place, and finally healed two or three days after removal of the tube. I have since felt that this was nothing more nor less than an empyema of the gall bladder which had been opened through the liver substance above it.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

Another case which I often recall is that of a poor Chinaman who was brought in during a yellow fever scare with jaundice, spongy gums, some temperature and a slow pulse, with the history of having been sick several days. He spoke no English and seemed to be suffering a great deal, and the only word we could get from him in answer to all questions was "belly, belly, belly", but nobody seemed to believe he had any pain in the belly, everybody was sure he had yellow fever. When he died a few days later an autopsy was held in the presence of all the constituted health authorities. He presented no post-mortem signs of yellow fever. We found a stone in the common duct which was fully one inch in diameter and about two and one-half inches in length, the largest stone of this kind I have ever seen. This stone completely obstructed his common duct and was responsible for his death.

I remember a number of other instances in which acute septic processes in the upper abdomen of an obscure character were opened and found to contain gall stones and were permitted to drain as long as they would: We finally mustered up enough courage to actually operate on some of these cases, with the timid expectation of finding some gall bladder trouble and especially gall stones. The gall bladder was exposed through incisions running in various directions and of varying geometrical outline. In the typical case without adhesions the gall bladder was carefully sutured all around to the parietal peritoneum, so that there would be no leakage of bile into the cavity. The wiser ones did not open the gall bladder immediately, but waited a few days, much as is now done with colostomy. A small incision was then made into the center of the exposed portion of the gall bladder, through which the stones would be fished for with probes, forceps and other instruments; the procedure being repeated with each dressing until the wound finally closed in spite of this repeated interference. From time to time during this process one or more stones would perhaps be found in the dressing and there were various attempts at guessing by different attendants as to how many stones were left behind and when the last one would take a notion to come out. Patients would thus continue to drain for months and sometimes for years.

The work of the Mayos and their reports in the literature probably did more than anything else to put gall bladder surgery in the realm of practical work. We took our turns at visiting the Mayo Clinic, saw their simplified technic and came home and did likewise. Careful walling off of the field with gauze packs and the invagination of the summit of the incised gall bladder by means of a purse string suture, which was closed around a gauze jacketed tube, gave to the procedure a degree of safety, which soon rendered it one of the most popular and frequently performed operations.

It happened, however, that many of our cases had a recurrence of the symptoms and at re-operation stones were again found, even in cases that had been very thoroughly explored before and where we had felt sure that we had not left any stones behind at the previous operation; so that when the advocates of cholecystectomy came along and advised removal of the gall bladder we thought we finally had it. These men told us that gall stones were a mere accident which developed during the process of inflammation of the gall bladder, and further that the location of infection was not on the mucous surface, but in the sub-mucous tissue of the gall bladder. So that we must remove the gall bladder to get results. Rosenow of the Mayo Clinic went so far as to get cultures from diseased gall bladders which had been removed from human beings, injected these cultures into animals in various portions of the body, and he was able to show a number of cases in which these animals developed cholecystitis, giving to the bacteria found in the diseased gall bladders a specific selective affinity for the gall bladder.

It followed that gall bladders were now removed without end, and every man who had had a cholecystostomy was given the hopeful information that he could now get well if he permitted us to remove his gall bladder, which was no good anyhow. Many of these patients, however, had recurrence of symptoms after removal of their gall bladders, so we now in sheer desperation called in the gastro-enterologist to entertain the patient as it were, while we hopefully waited for something to happen.

But it seems that in the meanwhile the gastro-enterologists had been busy, like all good specialists, trying to enlarge their field by including the gall bladder and biliary tracts. Especially was this so since the duodenal tube had come into general use. They had been for some time playfully suctioning out duodenal contents, subjecting them to chemical and other analyses, and watching results after injection into the duodenum of various ingredients. To our surprise they were able to help some of these patients for whom we had done everything that surgery could do and whom we had not cured;—and now they go so far as to tell us that they can tell gall bladder bile from that which comes from the common duct or from the liver, and that they can look at gall bladder bile not by means of the X-rays or through an abdominal incision, but through a duodenal tube, and can tell you whether you have gall stones, an acute or chronic gall bladder infection, or whether or not there is anything at all the matter with the gall bladder.

The question of focal infection has also come into play in connection with gall bladder diseases, and many have been the reports in the literature of repeated gall bladder attacks which have failed to recur after the removal of infected teeth, tonsils, and other organs, so that now there are those who feel that you should look for an original focus of infection and remove it if possible before you think of subjecting a patient to such a serious thing as a gall bladder operation. Between these fellows and the gastro-enterologists we are placed in the predicament of wondering whether we ought to do any gall bladder surgery at all, but rather whether we should not call in a dentist and throat specialist first and if they fail to effect a cure, then call in the gastro-enterologist to try his hand before we operate, so that he won't have to come in and cure the patient after operation.

We can get some valuable pointers from these gastro-enterologists if we are on the alert, as a little incident which happened recently will illustrate. I operated on a patient who had a very large gall bladder stone and several soft smaller stones in the common and hepatic ducts. These latter I removed after considerable technical difficulty, and when I had finished I feared lest I might have left some small particle behind. The patient was so sick that I drained the gall bladder instead of removing it. A small drain was also placed down to the point where the common duct had been incised and sutured. Bile poured from both drains until they were removed several days later, and through the gall bladder opening for fully three weeks. Her stools during all this time were of the chalky character characteristic of common duct obstruction, so that I soon began to worry, and was about to call in my friend, Dr. Levin, to see what he could do with his duodenal tube, when I recalled hearing him tell how by the injection of a small quantity of magnesium sulphate solution through his tube with its end at a point opposite the papilla of Vatter, he could produce an almost immediate relaxation of the sphincter of the papilla and a free bathing of the duodenum with bile. It occurred to me that if a little through the tube could do this maybe a lot through the stomach might have the same effect. So I gave my patient three ounces of a saturated solution of magnesium sulphate and almost immediately the gall bladder stopped draining and her chalky stools became normal.

To boil down into a few words then the sum of our past experience and present knowledge on the subject we may conclude:

1st. That we have probably perfected our surgical technic to the point of getting very satisfactory results so far as such results can be obtained by surgical procedures.

2nd. Whether we drain or remove the gall bladder, there is a certain percentage of cases which we do not cure by surgery alone.

3rd. The Gastro-enterologists certainly do report a constantly increasing number of authenticated symptomatic cures of cases which, in the light of former experience, would have been amenable to surgical treatment only.

4th. The Gastro-enterologists have symptomaticaly cured many cases after we had exhausted every surgical means and failed.

5th. We must not lose sight of the fact that the gall bladder lesion may be necessary to some primary focus of infection somewhere else and every effort should be made to find such a focus and remove it before a serious gall bladder operation is undertaken.

6th. And finally—That no conscientious surgeon can do good gall bladder work without the active help of a competent gastro-enterologist to whom he can refer his patients both before and after operation.

DISCUSSION.

Dr. A. L. Levin, New Orleans: Inasmuch as Dr. Danna mentioned my name in his paper, I cannot refrain from saying a few words. Dr. Danna was perfectly honest in his remarks in stating that the pendulum is swinging the other way. I stated in my paper which I will read before this society that nature has evidently favored the surgeon more than the internist by putting in a side track for the bile in such a way as to favor biliary stasis and infection; the medical profession and also the layman have considered gall-bladder disease as strictly surgical. But since the explanation by Meltzer of the theory of contrary innervation, meaning that physiologically when the gall bladder contracts the papilla of Vatter relaxes and that with magnesium sulphate we can accomplish the same thing, experimental work has been undertaken to drain the gall bladder medically. The results obtained so far are favorable in a number of cases. The general impression is today that this is one of the most important subjects in modern medicine. I received a note from Baltimore recently that at the conference of American Physicians the most important subject discussed was the one we have under consideration today.

Dr. Danna knows that some of his cases, after he removed the gall-bladder, came back to him complaining of pain and vomiting, as before, and he referred them to me to see what I could do with the tube. After one drainage some of them were relieved of the intense pain and vomiting. An interesting point was, the fact that a year after the operation the same character of infected bile the surgeon found at the operation I obtained with the tube. To my mind in some of these cases probably the common duct is distended and takes the place of the gall bladder, and in filling up it causes intense pain, or the existing cholangitis was not relieved by the surgical drainage. The moment the bile is drained off the patient is relieved, and continues to improve when the cholangitis is relieved.

Another point Dr. Danna spoke of is the infectious side of biliary disease. There is another picture to it which Dr. Danna has not mentioned. Several months ago there was an excellent article published by Rothschild and Wallingstein stating that the cholesterol content of bile and blood should be considered. In other words, we have in a great number of cases hypercholesterinemia which plays an important part. I have been trying to convince the profession that there is a great deal of truth in it. We cannot get away from the experimental work of Rosenow in proving the infectious side. There is an infectious side and a hypercholesterinemia side, and the surgeon should not overlook this in some of the cases that do not get well. In the infectious type all the ducts may be infected, and the removal of the gall-bladder and a short drainage cure the infection, the surgeon may also be dealing with a condition known as hypercholesterinemia, and the importance of putting the patient on a cholesterol full diet has a certain significance.

Referring to the magnesium sulphate statement made by Dr. Danna, I think I made it clear in a paper I read several months ago that magnesium sulphate is not necessary in every case. The mere presence of food will cause the same physiological act, and the presence of a tube in that region causes the same drain or sodium sulphate will accomplish the same. I will read a paper on that subject shortly outlining the entire subject more clearly. I believe we should all recognize by now that treatment of gall-bladder disease is not always surgical. We can do a great deal of good with medical drainage as well as with surgical, and in some cases probably better.

Dr. P. B. Salatich, New Orleans: In operating on these cases by either draining or removing the gall-bladder, I always think that if you remove a gall-bladder that has a good many adhesions, you will find the patient is very much benefitted. On the other hand, sometimes you find a gall-bladder that apparently looks all right, but if you examine it carefully you will find the cystic duct is twisted and kinked. If you drain that gall bladder, you will not remove the kink in the cystic duct.

Another point: When you drain the gall-bladder the first bile that comes out may be a little yellow and the odor seems all right, and if great care is taken there need not be necessarily infection. However, in two or three days you will find quite a lot of ugly stinking bile, coming out of the gall-bladder, lasting for several days or maybe two or three weeks when it clears up. Such bile is evidently not coming from the gall-bladder, and the thought has occurred to me that it is possible the bile is coming from the liver.

To bring up the point made by Dr. Levin, when we have an infected gall-bladder we are also apt to have an infected liver, and the bile that comes from the liver may have a stinking odor.

Recently I removed a gall-bladder and the patient vomited after two days. I washed the stomach out every day for a week. The first day she had some stinking bile, then a little less, until about four or five days or a week the bile was almost normal.

The question of bad teeth and diseased tonsils is one that we should consider before we attempt to remove or drain the gall-bladder. We ought to be sure that the teeth and tonsils are perfectly normal before draining or removing the gall-bladder. I make it a rule to examine these patients and to have diseased tonsils removed. It is a good thing to have the teeth X-rayed and have the bad ones removed. If the symptoms are not better I would advise operation.

About four years ago I operated on a woman for gall-stones, removing her gall-bladder, and she got along fine for three years, and was perfectly well. About a year ago she began to suffer from almost the same symptoms as she had before operation. She came to my office, I examined her, and found her liver was three inches below the costal arch. She had pain. She seems to have had as much trouble after the removal of the gall-bladder as she had before. A careful examination of her mouth showed that her teeth were in bad condition. After the removal of the carious teeth the liver symptoms subsided and she was absolutely free of pain.

Another case had so many symptoms that one could make a diagnosis of gall-bladder trouble and appendicitis at the same time. She has had too much surgery, and I looked for the focus of infection. It was found that she had several badly abscessed teeth. A dentist on two occasions removed these badly abscessed teeth and during the operation she fainted. It was right near my office and she had to take four or five sittings before the dentist could remove all of her diseased teeth. I told her that in two weeks I wanted her to come back to see me and to give her another treatment, also to see how much the removal of these teeth influenced her stomach trouble. She came back in a month absolutely free from any symptoms.

Dr. E. M. Ellis, Acadia: I think Dr. Danna's paper covers one of the most important fields in both medicine and surgery that we have to contend with, but there is one point I am especially interested in because I happen to have one or two patients now that fall into this field as the end effects of gall-bladder infection. I mean by that I go further than gall-bladder and bile ducts and take into consideration the secondary superimposed infection from the gall-bladder upon the pancreas. It has been shown by past experience that this infection probably produces a stasis in the ducts of the pancreas, which ultimately works to the destruction of the parenchyma of the acini of the pancreas and later encroaching upon the islands of Langerhans, and a diabetes or glycosuria results. If we are to protect our patients from such a late result as the destruction of these islands, we must look to the early treatment of the infected gall bladder, whether it be by drainage, cholecystectomy, or whether it be by the duodenal tube, but let it be one or the other.

I have a patient at home, a friend of mine, who came to me not long ago and said he was very sick. He had nausea and could not eat. He is a man who is under my observation every day. In examining him I found he was very tender over the gall-bladder, so much so you would think he really had empyema of the gall-bladder, but he had no temperature. There was nothing except tenderness. He had lost weight. I examined his urine and found it was loaded with sugar. The question arises, is it too late to cure this man's diabetic condition? These islands of Langerhans have undergone fibrous or hyalin degeneration, and although you remove the cause which may be the stasis of infection, obstructing the pancreatic duct, the damage is there, and after the infection has been relieved the glycosuria will very likely continue.

I remember operating on a case that Dr. Eustis and Dr. Bel saw. I referred her to them for examination, and they both advised cholecystectomy or drainage of the gall-bladder as she had what was termed pancreatic glycosuria. It has been nearly two years since the gall-bladder was removed, and at the time it was removed drainage was kept up, and she had free drainage of bile for about six weeks. Now, I have to keep that patient on a limited carbohydrate diet. If I do not, sugar reappears in the urine. It has been shown by the observations and experimental work of Rosenow that these islands secrete a hormone, which is an internal secretion and independent of the parenchyma of the pancreas. That controls the carbohydrate metabolism, and if these islands are so destroyed that this hormone cannot be secreted, we must necessarily have a continuation of the glycosuria. It has been shown by Cecil, of New York, who held 90 autopsies on diabetics who had died, that in 87 per cent. of the cases the islands of Langerhans were destroyed.

Dr. J. A. Danna, New Orleans (closing): In thinking more deeply of what I read am certainly sorry to have brought up the subject in the manner I did, because I am afraid it will give Dr. Levin so much work that he will not be able to take care of my patients any more. The remarks of Dr. Ellis and the statement of Dr. Levin merely emphasize the necessity for surgeons having at their command a gastro-enterologist who can look at these cases when they first come to us. Personally, we do not like to operate on a patient immediately after the first gall-bladder attack because we know lots of these patients do not get a second attack. We may feel that there is definite pathology in the gall-bladder which will continue if it is not removed before we subject the patient to operation. Therefore, the early cases should be seen by the gastro-enterologist for weeks and months and years, if necessary. Then, if they do not improve with treatment it is time to do surgery.

Dr. Levin referred to the fact that I did not mention hypercholesterinemia. I did not mention a great many other things that might have been mentioned in connection with gall-bladder disease. That is a point that he as a gastro-enterologist would have to take care of for me.

CHOLECYSTOSTOMY vs. CHOLECYSTECTOMY.*

By E. DENEGRE MARTIN, New Orleans.

The title of this paper is rather ambiguous and really does not convey the correct impression, but is used for want of better. I shall not dwell upon the subject of cholecystitis, as those who have preceded me have gone pretty thoroughly into the subject, both from the surgical and medical aspect, and although it would seem that the last word on the subject had been said, yet there are times in which even years of experience leave one in doubt as to which is the best method to apply in a given case.

One of the common conditions found in old people is a chronic cholecystitis, due usually to choleliathiasis. In these the symptoms may lie dormant for years, when a sudden attack will jeopardize the life of the patient. In such cases surgical interference alone will bring relief and where the condition is serious, it is questionable at times whether an extensive operation can be survived.

Several years ago my attention was first brough to this condition when called in consultation to see a woman 62 years of age, who was suffering from an acute attack of cholecystitis and who for several days had been having chills with a temperature running as high as 106. Her condition, though critical, could be relieved by operation only. After the usual preparation, the abdomen was opened through the right rectus incision, revealing a distended gall bladder, clearly pathological, containing a number of stones. I realized that the condition of the patient would not permit a cholecystectomy and that drainage by the usual method would mean a prolonged convalescence, resulting possibly in a permanent fistula. It occurred to me that this condition could be treated as an ordinary abscessed cavity. I realized, however, and knew from experience that simply to incise the gall bladder at the fundus and drain would accomplish nothing, as drainage would be incomplete. I therefore incised the gall bladder from the fundus to the cystic duct, caught the bleeding points, then thoroughly cleansed the mucosa and swabbed it with iodine. The cystic duct was apparently obliterated. I inserted a cigar drain with tube in centre, sutured it into the gall bladder and closed the abdominal cavity. What I hoped would be a life saving measure and would tide the patient over the critical period has proven even more—a complete success. This patient is well after a period of two years and has had absolutely no complications following the operation.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

A year ago a second case fell into my hands. This patient, a few years younger, had been suffering for months from recurrent attacks of gall stone colic, with marked jaundice, showing a condition of cholangitis. After opening the abdominal cavity, I found almost the same condition which existed in the first case, extensive adhesions and free hemorrhage whenever an attempt was made to dissect out the gall bladder, an unpleasant prospect indeed for a cholecystectomy. Remembering my experience with the first case, I carried out here, identically the same technic but was able to get a drain into the cystic duct, which is indeed a great help, as the bile can then be drained into a receptacle and not pour over the abdomen. This patient also made an uneventful recovery except for a superficial abscess which occurred about six weeks later. She is well today.

The third case was a lady whom I had seen three years previously and diagnosed renal calculus. She had been fairly comfortable, I understand, up to within a few weeks of the date of my visit. Examination revealed what I thought to be a distended gall bladder. The patient was taken to an institution where the radiologist reported a large stone in the gall bladder and a small one in the left kidney. From the location of this stone he seemed justified in his conclusions. As her condition was growing more serious each day, with repeated chills and high temperature, due unquestionably to cholecystitis, I determined to operate. The gall bladder itself was about twice its normal size, leathery in appearance and surrounded by adhesions to the omentum and transverse colon. A free incision was made in the fundus, a large number of stones and a quantity of soft material, with some fluid, removed. The cystic duct was apparently occluded. As the patient's condition did not warrant any prolonged operation, I split the gall bladder from the fundus to the apex, swabbed it out thoroughly with iodine and sutured in position a cigar drain, the whole operation requiring but twenty minutes. There was no shock attendant upon the operation, the patient made an uneventful recovery and not until a week later was any bile seen on the dressings. From that time, however, the flow was rather free, and though it retarded the closing of the wound, this patient had no return of the symptoms and lived comfortably, notwithstanding the renal condition, until her death, which occurred six months later as the result of some acute condition which carried her off after an illness of only two or three hours. The cause was never known. The shadow on the right side, which was supposed to be made from a stone in the gall bladder, proved to be in the kidney, as the same shadow was shown after the removal of the stones in the gall bladder, which were translucent, and confirmed the diagnosis made three years previously.

Another case was one in which I assisted Dr. A. C. King. This patient had a ruptured gall bladder, due to ulceration, caused by a stone lodged near the cystic duct. Her condition was more critical than any of the cases reported and I suggested that the same procedure be carried out here. This was done with the result that the patient today, six months after the operation, is enjoying excellent health and, I might say, much to the surprise of both doctors. We felt that it was only a safety first measure at the time and that a second operation would be required. Only a few days ago, April 16, a patient was referred to me with empyema of the gall bladder who gave the history of having suffered a week from violent pains in the epigastric region at the time of admission. Through the usual route I exposed a mass formed by adhesions of duodenum, transverse colon and omentum, completely obliterating the gall bladder. This was carefully dissected away from the fundus which ruptured during the operation. With the suction apparatus the gall bladder was emptied, by extending the incision in the direction of the liver an abscess was encountered, showing that a rupture had occurred into the liver. The gall bladder was incised its entire length, freeing the adhesions sufficiently to do so, a cigar drain sutured into position, a small gauze pack to control hemorrhage and the abdomen closed. He has suffered little since operation and except for a slight rise of temperature the day after operation his pulse and temperature have been normal.

These cases are so convincing to me and the technic so simple that I thought it well worth reporting them here, as gall bladder surgery, at best, is difficult, even in the hands of an experienced operator and there are times when those of us who have been less fortunate may be called upon to act in such an emergency. It is gratifying therefore to know that an expedient which had been carried out as a temporary measure has in four cases, possibly five, proven not only a life saving measure, but given results equal to any obtained by a cholecystectomy and certainly less hazardous. The advantage, I believe, in this procedure, is that it absolutely destroys the gall bladder, as the circular fibres cause the walls to retract. It is then nothing more than a flattened surface which is obliterated by contact with the omentum, where the adhesions are less apt to give rise to the secondary and annoying symptoms so often followed by a cholecystectomy.

I do not wish you to understand, however, that I would recommend such an operation in lieu of cholecystectomy where this operation is indicated and can be done without jeopardizing the life of the patient, but it certainly is applicable in cases where a long operation, extensive dissection and infection would mean severe shock and possibly death. The question of gall bladder surgery is still unsettled. There are two distinctive schools today which we might call the conservative and the radical, the one removing every suspicious gall bladder, or so called strawberry gall bladder, but which should more properly be called a dewberry gall bladder as it more nearly describes its normal condition. I have myself been guilty of doing a number of cholecystectomies which I believe would have given far better results had a cholecystostomy been done. In many of these cases drainage will give far better results, especially if that drainage is continued sufficiently long. Some of the cases in which we have recurring symptoms and persistent pain are not due to recurrent cholecystitis, but rather to the fact that the gall bladder had been fixed to the abdomen instead of being allowed to drop back to its normal position and the tube brought through the abdominal wall, preferably through a stab wound. Where such a technic is carried out there is less apt to be any postoperative discomfort and the gall bladder can better contract than when suspended at a point beyond its normal position.

DISCUSSION.

Dr. A. C. King, New Orleans: There is no question about the importance of a correct diagnosis in acute conditions of the upper abdomen. In the case of rupture of gastric ulcer the indications are very plain, namely, to suture the hole and do a gastro-enterostomy then later, according to the indications of the case. The same remarks hold true in regard to perforation of a duodenal ulcer.

When it comes to acute gall-bladder conditions it is a question of our ability to make a diagnosis as soon as we get into the abdomen and to know what to do after the diagnosis is made. Eisenrath has observed an effort on the part of nature in his experimental work on dogs toward reconstruction of the gall-bladder if enough of the cystic duct is left; also a partial enlargement of the common and hepatic ducts. Murphy has observed the same phenomenon in the human. Now, if nature makes an effort to reproduce the gall-bladder, why must we always make an effort to remove it, no matter what the operation? One operator of some note has stated that he removes 97 per cent. of all gall-bladders. The remarkable feature in that particular instance is the fact that he leaves the other 3 per cent. Why not remove the whole 100 per cent. and be done with it?

Operation in old people is quite different from that done on younger subjects, and one of the most important points to remember in cases of that nature in old people is to get in and get out quickly. Murphy, I believe, aptly expressed it when he said that we should get in quick and get out quicker. That holds good in elderly subjects. Old patients do not bear prolonged surgical procedures as well as young subjects. Therefore, it is necessary to finish the operation as quickly as possible.

This method of Dr. Martin's I have noticed in several cases, and the last case in which he assisted me was an old woman whose condition seemed apparently hopeless. There, with the gall-bladder wide open we were enabled to clean it out thoroughly, swab it out with iodin, and get out of the abdomen much more rapidly by doing this conservative operation than by doing a cholecystectomy. I think it is much better to do this where it can be done. I think it is better to return a well patient to her family with a gall bladder than to return a dead patient without his or her gall bladder.

Dr. F. W. Parham, New Orleans: I desire to call attention to two points. Those who advocate taking out the gall-bladder, as a rule, put the gall-bladder in the same category as the appendix, which I think is wrong.

Another argument is that derived from such experiments as were performed by Graham on dogs. He said in every case of cholecystitis the liver is involved, and he says that as a result of his observation in St. Louis, the practice was to take out all gall-bladders.

If the liver is involved in every case of cholecystitis, it might be cured with a drainage operation. Therefore, it is very essential to select the cases. I have had myself the same experience in cases where I have drained the gall-bladder and have subsequently gone back and taken these gall bladders out. I recall particularly the case of a man, 75 years of age, in whom I only drained his gall-bladder. He did not do well after that operation. He went on for some months complaining all the time, and the wound was a long time in healing. I took the gall-bladder out with less difficulty than if I did a drainage operation. He made a complete recovery. Such cases as that make us feel sometimes that we drain gall-bladders when we ought to take them out, but the rule which I follow is that unless there is something definite in the pathology of the gall-bladder that we can make out at the time of the operation, that gall-blader ought not to be sacrificed.

Dr. E. Denegre Martin, New Orleans (closing): I would like to explain one point which I think is important, namely, if you drain a pathologic gall-bladder, you leave a cesspool which will never heal. You cannot drain it thoroughly. You can do it temporarily if you continue to pack it, but if you will take the same gall-bladder and incise it down to the cystic duct and tear it open on each side, you destroy the possibility of that thing existing. If you can get into the cystic duct so much the better. You are dealing with a gall-bladder that is thoroughly pathologic. When you remove the gall-bladder there is some danger of a raw surface being left behind at the site of the condition here. We know how badly thse cases do where there is infection near the diaphragm. The only thing that comes in contact is the jejunum.

I have been much astonished to find how well these patients did after doing the operation I have described. It is a life-saving measure. It has proven more than that, and I am tempted to do it in every case to see what the effects will be. The liver is not touched. Those of you who have dealt with these acute infected cases know what hemorrhage means. I operated on a friend of mine, removed his gall-bladder, and the hemorrhage was so severe in this case that it kept me worried all the time I was operating. That was a case where cholecystostomy could have been done. It was a small contracted gall-bladder and was said to be malignant. Where I am dealing with a woman from 60 to 80 years of age, the operation can be done in twenty minutes. You are doing away with the danger of leaving a cesspool where it cannot be drained. When the drainage is taken out the omentum falls over it, and these are the cases where a lot of trouble seems to exist from adhesions, and these are the ones we are tubating today.

PROCEEDINGS OF THE STAFF OF HOTEL DIEU.

MEETING OF JULY 11, 1921.

DR. J. E. ISAACSON: That the Endocrines and Organo-Therapy are playing a large part in modern medicine is now an established fact. That this innovation as all other advances in medical science is regarded with skepticism by the profession at large, is also an established fact. However, be that as it may, since the advent of bacteriology and biological therapy, no feature in clinical or text-book reports has exacted so much attention as the relationship of the hormones and various endocrines to therapeutics. It is well known that Brown-Sequard and others, as far back as Hippocrates, have recognized and employed various constituents of the animal organs in their practice, hence, said feature is by no means embryonic.

The isolation of the specific ductless glands and a study of the physiological functions of their products are however, in their infancy. Adrenalin, Pituitrin, Thyroid and Ovarian Substance are perhaps the more common products usurped by our 'End-Product Physicians'', and if our Journal reports be correct, the results obtained are not merely remarkable, but amazing as well. The following case may be of some interest:

Was called in consultation March 15th of this year. Patient, C. T., aged 16 years. Complaint: Fits and recent development of increasing evidences of non-localized pains over body in general.

The patient was in a state of partial coma, and the following history was obtained from his mother: "He is the youngest of nine children all of whom, with this exception, are hale and hearty. At one and one-half years of age, while suckling he appeared to be taken with a convulsion. The family doctor was readily called, who substantiated the mother's diagnosis and assured her of no further danger. From said date until the age of 5 years however, attacks of similar convulsions became more and more frequent, and were later noted daily. In a few months, four and five spells a day were not uncommon, during which seizures the patient was rendered unconscious, "fell out" and bit his tongue. As a final resort, after observation and treatment by the various pediatrists and psychiatrists, he was sent to a mental institution. Here his case was diagnosed as epilepsy, and a straight jacket was applied to prevent further harm to himself. In this institution he remained for one year, with attacks steadily increasing in intensity. The convulsions appeared to be more pronounced now immediately after eating, and at night after retiring. At no time did he appear to have any premonition of the oncoming condition, otherwise than cramps in his abdomen 3 or 4 minutes previous to the convulsions. Directly after the attack his body would be in a clonic seizure, whereupon he would fall to the ground, remaining in this condition from thirty to forty-five minutes. During attacks patient would be cyanosed and covered with a cold perspiration.

After returning home during two months, was again returned to the institution, and was discharged from said place four months later as being incurable, and being further afflicted with Bright's disease."

Has been at home and confined to bed since January of this year (4 months). Has lost thirty pounds in body weight, and vomits all food immediately after eating. Has, since last mentioned date, lost all control of bowel and bladder functions, and appears to be in pain from the writhing movements and cries rendered.

Physical Examination.—Revealed an under developed and poorly nourished, white male with facial characteristics of an old man.

He appears in pain, rendering peculiar shrieks and is continually crying. The cranium is apparently normal with many scars on same and about face. The mouth, teeth, pharnyx and larynx are negative but the tongue is large and well scarred. The skin is dry and without much hair. The scalp is dry. The thyroid shows apparent good development. The chest, including the heart and lungs, is negative. With the exception of a slightly enlarged spleen and evidences of numerous traumatic injuries the abdomen is negative. The back possessed a bed-sore of huge proportions, to such an extent that the greater part of the sacrum was readily visible. The extremities revealed short, stubby toes and fingers, and with the exception of numerous scars, were negative. No swelling of extremities was noted.

Reflexes:—Eyes react normally to light and to accommodation. The knee, elbow and other reflexes appeared to be exaggerated and were elucidated with much pain. All of the glands were moderately enlarged, and the history of polyuria was well evidenced. Dr. J. Lyle, interne Hotel Dieu, very kindly assisted me in the following laboratory findings. Urinalysis:—Negative on repeated examinations, except for a persistent specific gravity of 1000.

Feces:—Negative.

Blood:—Wassermann, negative. Total Leucocyte Count, 8,250. Total Erythrocyte Count, 4,175,000. Haemoglobin, 90%. Color Index, 1.1. Differential Leucocyte Count, Small Mononuclears 35%; Large Monocluears 3%; Neutrophiles 62%.

Treatment:—I immediately started treatment by administering capsules of Anterior-Pituitary Body Compound, basing my therapy on the fact that so called "Idiopathic Epilepsy" was often due to pituitary deficiency. The initial dose was Five Grains, which was administered three times a day. Now, strange and amazing as it may appear, from the time of the administration of the first twelve capsules, there has been an absolute steady improvement, which heretofore has been unobtained from any and all medication.

At present date, July 12th, fourth month after initial dosage of the gland, said patient is up and about, having complete control of all body functions, and gaining 34 pounds in weight. The vomiting has entirely disappeared, and patient eats every thing, including Ant. Pituitary Body. Is able to do the ordinary chores about the house, runs errands, and can now write and spell the primary lessons.

Lastly there have been no fits, where previously he had four and five a day.

May it not be well for us to give the glands a fair chance?

NEWS AND COMMENT.

CHAULMOOGRA OIL AND TUBERCULOSIS. The recent widely circulated statement that the U. S. Public Health Service has found that chaulmoogra oil was as efficacious in the treatment of tuberculosis as it has been shown to be in the treatment of leprosy is said by Surgeon General Cumming to be unwarranted. No definite results were obtained through the experiments made some years ago. Recently experimentation with ester, or derivatives, was started because of the similarities between the bacilli of leprosy and those of tuberculosis, but it is said that the work along this line has not proceeded far enough to indicate results.

THE UNITED STATES BUREAU OF LABOR statistics show considerable changes in the cost of living for the United States as a whole, from May, 1913, to 1921, based on an average drawn from 32 cities, with the per cent. of increase to December, 1914, at 3.0 and the corresponding month in the years succeeding steadily rising to May, 1921, when it reached the percentage of 80.4.

FUNDS FOR SCIENTIFIC RESEARCH have grown so numerous that the National Research Council has issued a bulletin under the title "Funds available in 1921 in the United States of America for the encouragement of scientific research" in order to give a wider publicity to the available information about such funds. It is stated that the income from research funds in the United States, which amounts to about 50,000,000 annually, is used for prizes, medals, scholarships and fellowships, grants, and the sustaining of appropriations and endowments. The Research Information Service of the National Research Council has started a special file which they propose to keep up to date in order to answer questions of those interested in such funds, with office at No. 1701 Massachusetts Avenue, Washington, D. C.

THE SOUTHWEST MEDICAL ASSOCIATION, THE MISSOURI VALLEY MEDICAL SOCIETY and the Veterans of the World War will hold a joint meeting at Kansas City, October 24 to 28, inclusive. At this meeting the Mid-Western Association of Anesthetists will organize and present a program. The Jackson County Medical Society will arrange special entertainments. Special home-coming festivities for the graduates of the University Medical College will be made a feature of the several gatherings, with alumni dinners for representatives of the various colleges and universities attending the sessions.

TEXAS STATE TUBERCULOSIS SANATORIUM has recently issued a report for twelve months ending April 30. From this we learn that 698 patients were discharged and of this number 247 made an excellent recovery; 258 made substantial improvement after their return home. The remaining number showed no improvement at all, but the report states that it must be remembered that a large number of patients were classed as far advanced when they entered the Sanatorium. The Sanatorium was not established as a home for consumptives but as a place where consumptives could be received and trained to take care of themselves on their return home. Treatment is now being given to from 700 to 1000 patients annually.

POISON GAS IN WAR. A defender of the use of poison gas in warfare has arisen in the person of Sir W. J. Pope, Professor of Chemistry in the University of Cambridge and President of the Society of Chemical Industry. Sir Pope disagrees with those who would have laws passed in all countries prohibiting the use of poison gas in war, giving as his reason for the disagreement that deaths from mustard gas in the world war were less than 2 per cent and when death did not ensue complete recovery took place. By comparison he submits the horrible mangling resulting from projectiles and other weapons of modern warfare with the consequent maimed and crippled. He states further that other materials which were in use in chemical warfare at the time of the armistice did not kill at all, but produced casualties which after a few weeks of hospital care were discharged without permanent injury.

NATIONAL MEDICAL ASSOCIATION, organized at Atlanta, Georgia, 25 years ago, and composed of *negro* physicians, surgeons, dentists and pharmacists of the United States, met in Louisville Kentucky, August 23 to 26, at which nearly 1,000 delegates were present. A leading feature of this annual meeting was the clinics, surgical, medical, dental and pharmaceutical. The general Secretary of the Association is Dr. Walter G. Alexander, of Orange, and Dr. G. E. Cannon of Jersey City is chairman of the executive board.

THE RED SHIELD OF DAVID is the name of a newly organized society on the order of the Red Cross composed of Jews with headquarters at Geneva. This Society intends to work hand in hand with the American Red Cross and the Red Crescent. it is said that several leading physicians, merchants and philanthropists of Geneva are at the head of the movement.

THE MEDICAL LIBRARY ASSOCIATION held its annual meeting in Boston in June, at the time of the meeting of the American Medical Association. Membership in this association includes all of the larger medical libraries of those interested in furthering medical library work. A system used in the Boston Medical Library was adopted as the most practical solution for meeting the problems of classification. Several interesting papers were read and the meeting addressed by the president, Dr. John W. Farlow.

NO SHORTAGE OF PHYSICIANS IN THE UNITED STATES. From a recent number of the Journal of the A. M. A. we quote: "At the recent meeting of the American Institute of Homeopathy in Washington, the statement was made, according to newspaper reports, that the 'United States is suffering a shortage of 25,000 physicians', and that special efforts should be made to 'induce young men to study medicine'. As has been repeatedly stated there is no shortage of physicians in the United States, at least so far as numbers are concerned. Based on figures of the recent census and on figures of the last American Medical Directory, the United States still has one physician to every 726 people. It is true that with the improvements in medical education in the United States during the last fifteen years, there has been a reduction in the number of medical colleges; but there is still an adequate quota to supply easily the number of physicians annually needed. Even under the higher educational standards, the annual number of graduates is again rapidly increasing. Meanwhile, the only demands for physicians are coming from rural or sparsely settled districts, to which physicians are not attracted, or where they cannot, or think they cannot, make a living. These communities will not be provided with hysicians by a return to lower standards of mdical education. The problem will be solved if the physicians in towns and cities who are barely making a living can be induced to locate in rural districts. The number of physicians in the United States is adequate; the problem is one of distribution."

MEDICAL SCHOLARSHIPS. The sum of $25,000 has been donated by Mr. and Mrs. Williams to establish two scholarships in honor of their son, Wingo, who has just completed his course in the Medical Department of the University of Texas. One of these scholarships will apply in the Texas Woman's College and one in the Medical Department of the University of Texas. The Fund covering both scholarships will be known as the "Wingo Williams Memorial Scholarship Fund."

THE RESULT OF MOUTH HYGIENE. In the *Medical Summary* we note that Dr. Alexander Lambert, Professor of Clinical Medicine in Columbia University, in making the rounds of one of the hospitals in New York City, noted the fact that there were no young rheumatic cases in the wards. In the record room he found 1000 cases of rheumatism recorded between the years of 1906 and 1912, and the average of these cases was 25 per 1000 admissions right along. Dr. Lambert noted the fact that today rheumatism in the young furnished only 0.5 per cent in proportion to other diseases and attributed this decrease in this so painful condition to the increased attention to mouth hygiene and the careful attention being now given to tonsils. The article goes on to say: "It is interesting to note that while there was a general reduction in the incidence of rheumatism in all ages, the percentage to the total number coming in had remained about the same except for the age period between twenty and thirty, in which not only had the percentage dropped, but the total number has dropped also, which was due to the fact that many had lost their tonsils as well as cleaned up their teeth."

ALASKA NEEDS NURSES AND PHYSICIANS to take care of the tuberculous and other patients and the United States Bureau of Education has undertaken to do what it can to check the ravages made by disease among the native races of Alaska. Salaries paid for volunteers for this work range from $1,800 to $2,800, for physicians, and for nurses, from $800 to $1,400 per annum. The Bureau defrays all traveling expenses. Persons desiring these positions are not required to pass an examination but must make application on the form prescribed by the United States Bureau of Education.

THE WISCONSIN STATE MEDICAL SOCIETY will celebrate its 75th birthday on September 7 to 9, at Milwaukee. As this is to be a "home-coming meeting" all former Wisconsin men are invited to join the Society on its birthday, and are promised an enjoyable program, both scientific and social. Those intending to attend the meeting may obtain details by writing to Dr. Rock Sleyster, Secretary, Drawer D, Wauwatosa, Wisconsin.

THE SHREVEPORT MEDICAL SOCIETY will meet September 6 for a Symposium on Diarrhea in Infants. Papers will be presented by Dr. M. S. Picard on ''Diagnosis''; Dr. J. M. Gorton on ''Treatment'', with Drs. C. P. Munday and Joe Frater to open the discussion.

THE ST. LOUIS SESSION OF THE A. M. A. The next annual session of the American Medical Association will be held in St. Louis, May 22 to 26, 1922. The Board of Trustees has appointed Dr. Robert E. Schlueter, of St. Louis, Chairman of the Local Committee of Arrangements. The Committee will establish an office in the headquarters of the St. Louis Medical Society, 3525 Pine Street. All communications for the attention of the Local Committee of Arrangements should be sent to that address

THE ROCKEFELLER FOUNDATION has issued a review of its activities in 1920, and gives therein a list of things done by the Foundation directly and through its departmental agencies, the International Health Board, the China Medical Board and the Division of Medical Education, summarizing as follows: Aided six medical schools in Canada; gave a large sum to a medical training school in London; appropriated a million francs for the Queen Elizabeth Foundation for Medical Research in Belgium; agreed to contribute towards the complete rebuilding of the medical school of the University of Brussels; provided American medical journals and laboratory supplies for ten medical schools and medical libraries in five European countries; continued to construct and maintain in Peking, China, a modern medical school with pre-Medical department; aided thirty hospitals in China; supported the School of Hygiene and Public Health of the Johns Hopkins University; contributed to the teaching of hygiene in the medical school at Sao Paulo, Brazil; provided fellowships in public health and medical education; brought to the United States commissions of medical teachers and hygienists from England, Belgium and Czechoslovakia; continued to support a campaign against yellow fever in South and Central America and in West Africa; aided government agencies in the control of malaria in ten states of the South; prosecuted hookworm work in ten southern states and in eighteen foreign countries; brought a war-time anti-tuberculosis work in France to the point where it could soon be left entirely in French hands; assisted government of Czechoslovakia to reorganize its public health laboratory system; brought to a close its participation in war-time emergency relief by giving a million dollars to the Fund for European children.

INJUNCTION AGAINST CHIROPRACTOR IN LOUISIANA. Recently the Louisiana State Board of Medical Examiners secured an injunction restraining Otis E. Cronk, a chiropractor of Alexandria, from practicing in Louisiana without a license. A rehearing later, given before the District Court of Alexandria, has made the injunction permanent.

THE BOSTON SURGICAL SOCIETY AWARDS MEDAL. A gold medal is to be awarded annually to the American surgeon contributing most to the advancement of surgery, this honor is to be given as a tribute to Dr. Henry Jacob Bigelow, the noted surgeon of Boston, who died about 1890. The first medal was awarded on June 6, to Dr. William J. Mayo, of Rochester, Minnesota, the day prior to the meeting of the American Medical Association, meeting in Boston. Dr. Mayo, in accepting the honor, gave in his address a very comprehensive and interesting sketch of the life and history of Dr. Bigelow.

ACCEPT APPOINTMENTS AS CONSULTANTS. Dr. George Dock, of St. Louis, at one time connected with Tulane University in its School of Medicine, and Drs. Otto Folin, of Boston, and L. Hekteon, of Chicago, haev received appointments to the National Pathological Laboratories as consultants to advise on methods used, and to interpret results and ethical politics.

NEW SOURCE OF RADIUM. Frequent rumors have been made through the *Scalpel* of Brussels to the effect that radium had been found in Congo, but now the Société de Géologie of Brussels confirms this fact that specimens of the mineral found at Katanga have been sold in London by a returning Belgian colonist.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet in St. Louis from October 13 to 15, inclusive.

THE ROYAL INSTITUTE OF PUBLIC HEALTH announces that it will be glad to welcome graduates of Tulane University, upon examination, to fellowships in the Institute which will place the facilities they possess for instruction in Public Health Work at the disposal of such graduates. The next Congress of the Institute will be held in Plymouth from May 31 to June 5, 1922.

Bust of Morton in the Hall of Fame. On October 16, in celebration of the Diamond Jubilee Anniversary of Morton's First Public Demonstration of Ether Anesthesia, a bronze bust of Dr. Wm. T. G. Morton will be placed in the niche assigned to him in the Hall of Fame, by American Anesthetists. We note with interest, however, from dispatches of the Associated Press, that the University of Georgia has taken action officially recognizing Dr. William Long as the discoverer of anesthesia, and although Dr. Morton has been elected as the discoverer, the University of Georgia declares having evidence that Dr. Long first used ether for a surgical operation on March 30, 1842, four years prior to its use by anyone else.

The Lafourche Valley Medical Society met at the home of its President, Dr. W. E. Kittredge, Tallien P. O., on Tuesday, August 9th. The Society had as its guest, Dr. Marion Souchon, of New Orleans, who presented a very interesting paper.

Personals: Dr. J. W. Newman, of New Orleans, has accepted a place on the Board of Directors of the Society for Prevention of Cruelty to Children.

Removals: Dr. H. C. Milburn from McNary to Ville Platte, Louisiana.

Dr. Lucien Ledoux from Maison Blanche Bldg. to 2117 Tulane Avenue, New Orleans.

Dr. James A. Azar from St. Martinville, La., to Galveston, Texas.

Died: On Thursday, August 11, 1921, Dr. Henry A. Veazie, aged 66 years and 2 months, a native of New Orleans, distinguished for services during the 1878 yellow fever epidemic, especially at Grenada, Miss.

At the Mexico Eagle Hospital, Tampico, Mexico, on July 18, 1921, Dr. Gustav Mann, formerly connected with Tulane University.

PUBLICATIONS RECEIVED.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Surgery, Its Principles and Practice, by William W. Keen, M. D., LL. D., Volumes 7 and 8.

Complete Index to Keen's Surgery, Volumes 1 to 8.

The Principles of Therapeutics, by Oliver T. Osborne, M. A., M. D.

Anatomy of the Nervous System, by Stephen W. Ranson, M. D., Ph. D.

WILLIAM WOOD & COMPANY, New York.

Manual of Midwifery, 3rd Edition, by Henry Jellett, B. A., M. B. F. R. C. P. I., L. M., and David G. Madill, B. A., M. D., B. Ch., B. A. O., L. M.

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Administration Intravenously of Beechwood Creosote, Sodium Cacodylate, Gasoline and Coal Oil in Tuberculosis, by B. F. Bell, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for July, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	2		2
Intermittent Fever (Malarial Cachexia)		3	3
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	2	2	4
Diphtheria and Croup	1	1	2
Influenza			
Cholera Nostras			
Pyemia and Septicemia	1		1
Tuberculosis	30	26	56
Cancer	23	9	32
Rheumatism and Gout	1	2	3
Diabetes	3	1	4
Alcoholism			
Encephalitis and Meningitis		1	1
Locomotor Ataxia		1	1
Congestion, Hemorrhage and Softening of Brain	18	6	24
Paralysis	2	1	3
Convulsions of Infancy	1		1
Other Diseases of Infancy	20	4	24
Tetanus	1		1
Other Nervous Diseases	6		6
Heart Diseases	55	26	81
Bronchitis	1		1
Pneumonia and Broncho-Pneumonia	11	7	18
Other Respiratory Diseases	2	1	3
Ulcer of Stomach	2		2
Other Diseases of Stomach			
Diarrhea, Dysentery and Enteritis	13	11	24
Hernia, Intestinal Obstruction		1	1
Cirrhosis of Liver	3	2	5
Other Diseases of the Liver	2	1	3
Simple Peritonitis			
Appendicitis	10	2	12
Bright's Disease	10	13	23
Other Genito-Urinary Diseases	8	16	24
Puerperal Diseases	7	3	10
Senile Debility			
Suicide	4	1	5
Injuries	18	19	37
All Other Causes	18	30	48
Total	275	190	465

Still-born Children—White, 26; colored, 17; total, 43.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death Rate per 1000 per annum for Month—White. 11.38; colored, 20.73; total, 13.95. Non-residents excluded, 11.70.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.02
Mean temperature	83
Total precipitation	7.90 inches

Prevailing direction of wind, west.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 OCTOBER, 1921 No. 4

EDITORIAL.

SERUM THERAPY BY MOUTH.

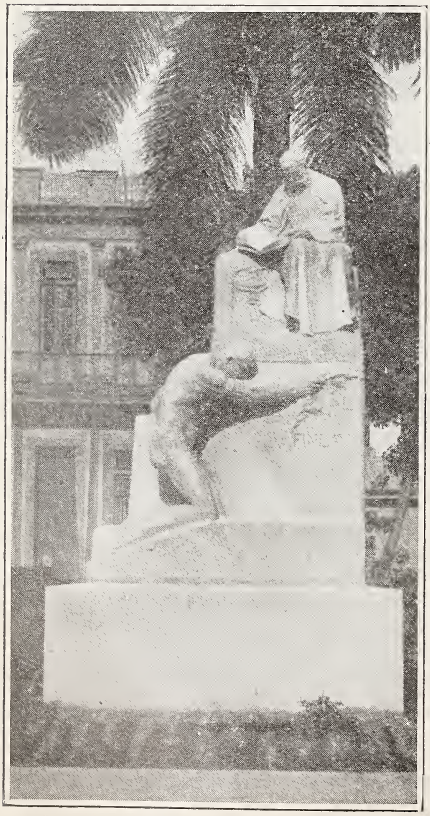
It is interesting, consoling, at the same time amusing in these days of hypodermic and intravenous medication to note an instance of reactionary tendency and one not devoid of practical utility.

We refer to the administration by mouth of antidiphtheritic serum both as a therapeutic and a prophylactic measure. This is reported by Dr. Leon Dufour, in the *Archives Médicales de Normandie,* who has been using the method for the last twenty years. He first tried it in the case of a very ill child, in a rural community, whose parents flatly refused to permit the injection of the serum. He administered 4 doses of serum (10 cc. each), fifteen minutes apart, in a little aromatized water. The child made a quick recovery. Encouraged thereby he continued the practice, resorting to one dose as a prophylactic with equal success. He was always ready to intervene otherwise, that is by needle, if circumstances demanded it, but has never found this intervention necessary. While he is fully aware of the theoretical objection to the method, namely the inaction of the serum in the presence of the gastric juices, he points in answer to the results obtained, the cure of the patients. As with the serum given by needle, the effects are prompt and satisfactory in proportion to the early exhibition and the size of the doses

A remarkable detail in favor of the administration by mouth is the total absence of anaphylactic reactions whatsoever.

In presenting the above facts it is not our purpose, we need scarcely add, to recommend the substitution of the buccal route for the subcutaneous as intravenous in the administration of antidiphtheritic serum, but it is good to know that such a method may be used with satisfaction if untoward circumstances or the fear of anaphylaxis interferes with the ordinary routine.

MONUMENT TO FINLAY.



We present a picture of the monument which was recently unveiled and is placed in the centre of Finlay Park at Havana, Cuba. It is in commemoration of Dr. Carlos Finlay y de Barres, who is well-known by his discovery of the transmission of yellow fever by the stegomyia callopus, leading to the demonstration by the United States Army Medical Commission and the developments which mean that yellow fever is now easily controlled and will in all probability be eradicated from the face of the earth before long.

The main feature of the monument is a statue of Dr. Finlay which, we are told is quite life-like. In the same park is also placed, in one corner, a bust of Lazear, the martyr yellow fever worker; three other busts are in the course of preparation for the other corners of the park, those of our Wm. C. Gorgas, of Juan Guiteras and C. Delgado, of Havana.

Dr. Finlay was born at Camaguey, Cuba, on December 3, 1883 and died in Havana on August 20, 1915.

We are indebted to Professor W. H. Hoffman, of Las Animas Hospital, Havana, for the photograph from which the cut of the monument was made.

HEMOGLOBINURIA.

In this issue we publish a paper by an esteemed and venerable member of our profession, Dr. F. M. Thornhill, of Ar cadia, on what he terms "Malarial Hemoglobinuria." This is one of the papers from the pen of an "unforgotten worthy" we had solicited from some of our past masters in various lines, a few of which have already been published, with more to come.

This paper was written eighteen years ago and then covered an experience of over thirty years, so that it shows the view point on the subject beginning practically half a century before the present time.

The author fully realizes that the scientific status of this subject and of malaria has changed and has greatly broadened, yet believes that the paper may nevertheless be useful in calling attention to the difference of opinion held formerly and now. We think the article serves the purpose admirably and can not agree with the writer in the opinion he modestly expresses that it has no scientific value. Facts are facts and their careful observation and honest recordation are of the highest importance in the solution of any problem and the settling of any scientific proposition. We are sure the paper will be read with the greatest interest as a valuable reminiscence and an important historic contribution.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

MALARIAL HEMOGLOBINURIA.*

By F. M. THORNHILL, M. D., Arcadia, La.

Malarial Hemoglobinuria as the name implies is supposed to be due to chronic or to intense malarial infection and is characterized by the appearance of the coloring matter of the blood (Hemoglobin) in the urine, imparting to it the color of port wine or poke berry juice of a deeper or paler hue according to the amount of coloring matter present. It is a disputed point among clinical observers as to whether the discoloration of the urine is due to the presence of hemoglobin alone or to the constituents of the blood as a whole. The microscope discloses the presence of red blood corpuscles in but few cases and their entire absence in the majority of others. So it would appear that in the greater number of cases, the discoloration is what the term implies, a true hemoglobinuria. The literature of this form of malarial fever is limited and meager, no extended account of the disease is contained in any of the text books of the past or present time and for our knowledge of the subject we have been dependent upon a few desultory and conflicting articles appearing in the medical journals from time to time. It has long been believed that this disease was of malarial origin and that the hemoglobinuria was due to blood changes resulting from chronic malarial cachexia or to an infection of more than ordinary virulency producing a hemorrhagic tendency, notwithstanding the well known fact that malaria primarily is not a hemorrhage producing disease. The nomenclature of hemoglobinuria has been derived more from the variations in its clinical manifestations in different localities than from any definite conception of its true etiology or pathology and it is known by different names in different parts of the world. Malarial Hematuria, Malarial Hemorrhagic fever, Climatic fever, Rice fever, Swamp fever, Black Jaundice, etc., are some of the names by which the disease is known in our own and other countries and our best authorities agree in the opinion that the black water fever of Africa has its clinical counterpart in this form of malarial fever.

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*Read before the Bienville Parish Medical Society, Arcadia, July, 1903.

The etiology of this disease is a subject on which there has been wide divergence of opinion among physicians but the preponderance seems to be in favor of malaria.

Against this theory is the interesting fact that few cases of malaria, comparatively speaking, assume the clinical features of this form of the disease and the further well established scientific fact that malaria never induces a hemorrhagic tendency as a primary effect, or else we should have hemoglobinuria occurring much oftener than seems to be the case from clinical observation. But, notwithstanding these apparently irreconciliable facts, there is a well grounded belief in the minds of most physicians that malaria is in some way concerned in the production of hemoglobinuria. Some have suggested that it is due to a specific form of the malarial parasite but scientific research has failed to discover such special micro-organism. A strong circumstance in favor of the malarial origin of hemoglobinuria is the frequency with which it occurs in malarial sections, coupled with a history of previous attacks of malaria in the majority of cases while it seems never to originate in non-malarious localities. The conclusion has been reached by some good authorities, appointed to investigate the subject, that the disease is of malarial origin but cannot be considered as possessing the characteristic features of a malarial attack.

The pathology of the disease is obscure and as yet not determined and various theories have been advanced to explain the cause and the source of the hemorrhage. Dr. S. M. Bemiss, who wrote the chapter on malarial fever in Pepper's System of Medicine and who at that time was more conversant with the clinical manifestations of malaria than almost any other man, was decidely of the opinion that the disease was of malarial origin and classed it as one of the pernicious forms of malaria. At that time Laveran had not discovered the plasmodium, or at least had not promulgated it, and the role of the mosquito in the propagation and the spread of malaria had not been dreamed of nor had Patrick Manson Jr. offered himself on the altar of science to determine this fact. Dr. Bemiss suggested three probable factors as being more or less concerned in the production of the hemorrhage, each of which contains sound reasoning. First he considered the blood changes incident to chronic malaria as so altering the consistency of that fluid as to favor hemorrhage. Second, that the malnutrition and textural changes resulting from the same so weakened the walls of the blood vessels as to increase their liability to rupture. Third, the increased blood pressure and passive congestion incident to the attack.

Malarial hemoglobinuria is also attended with jaundice, the association of which with the bloody urine constitutes the outstanding clinical feature of the disease. The cause of the jaundice has evoked almost as much discussion and controversy as the course and cause of this hemorrhage. The bloody urine and jaundice do not occur simultaneously, the former usually makes its appearance early in the cold stage of the attack followed by the latter a few hours. The suddenness with which the jaundice occurs suggests the operation of some powerful systemic toxic agent. Some have endeavored to explain its occurrence on the score of obstruction to the assimilation of bile and its constituents, while others ascribe it to excessive secretion. Dr. Bemiss accounted for it by what he called lack of consumption. He thought the addition of toxic agents, such as urea and its compounds, to the already profoundly poisoned blood suddenly arrests the physiological processes by which the bile is disposed of. Bloody urine, jaundice, nausea, vomiting, insatiable thirst, suppression of urine, sometimes complete, delirium, jactitation etc. make up the clinical picture of the typical case of malarial hemoglobinuria and when seen a few times is not easily forgotten. The attack often is very sudden and violent and not infrequently terminates fatally in a surprisingly short time.

At Columbia, on the Ouachita river, where the first ten years of my professional experience was acquired, I saw a great deal of this disease in its most typical and malignant form and a brief report of two cases that came under my observation will serve to show the suddenness of the attack and the rapidity with which it sometimes terminates in death.

Late one afternoon in October, 1872, a lawyer, about 35 years of age, residing on his plantation on the Ouachita river, four miles above Columbia, came into my office and told me he felt that he was on the verge of an attack of swamp fever and asked me to prepare him a certain laxative mixture he had previously taken, which he hoped might ward it off. He was a man of a high order of intelligence and had had one or two attacks before and was familiar with the clinical features of the disease and the manner of its approach. I prepared the mixture he called for and he went immediately to the ferry, crossed the river and proceeded to his home and was seized with a severe chill soon after arriving there. An hour or two later a messenger came for me to go to see him. I reached his bedside about 11 o'clock that night and found him in a stupor with the clinical picture of hemoglobinuria fully developed. The extremities were cold, the pulse at the wrist absent, the entire body was bathed in a deeply colored perspiration and it seemed to be literally an example of sweating of blood. Jaundice was profound, large quantity of dark colored urine was voided involuntarily for a few hours, when the kidneys ceased to act, the stupor deepened and death closed the scene, in about eighteen hours from the time he came to my office.

The history of the second case is very similar in every respect to the one just related and I will not detain the society to give details further than to say that the patient was a white man about fifty years of age apparently in good health but had a history of previous attacks. The attack was equally sudden as in the case of the first patient and terminated fatally in about the same length of time. After the lapse of more than thirty years, the picture of these two cases remains vividly in my mind. At that time perhaps considerably less was known of the etiology and the true pathology of the disease than now and I believe a great deal yet remains to be learned. Opinions differ as widely concerning the treatment of hemoglobinuria as to its etiology and pathology, one of the chief differences being with regard to the use of quinine. There seems to be a growing belief in some sections that there is a certain causal relation between quinine and hemoglobinuria. Some good physicians contend that in some persons and in certain conditions the drug will produce the disease, but what those conditions are has not been determined.

The aid of experimental therapeutics has been invoked to determine the question and not long ago Ross and Law reported in the *British Medical Journal* some interesting experiments bearing on the subject. A patient recently returned from Africa who had had a number of attacks, volunteered to demonstrate in the presence of the students of the London School of Tropical Medicine the fact that quinine would produce hemoglobinuria in his own person. In October 1902, believing this patient had an attack of malaria, he was given 10 grains of quinine at 5 p. m. and at midnight he had a rigor and developed typical hemoglobinuria which lasted several days. On

March 11, feeling chilly and feverish he was again given ten grains of quinine at 7 p. m. and at midnight developed hemoglobinuria and in a few days was apparently well. On March 23, Dr. Manson, a member of the faculty of the London School of Tropical Medecine gave him 10 grains at 9 p. m. and at 11 a. m. he had a rigor followed by nausea, vomiting, bloody urine and jaundice, thus proving conclusively that in this patient at least quinine would and did produce hemoglobinuria.

On the Ouachita river, where, as before stated, I saw a great deal of this disease, there was a deeply rooted belief among the laity that quinine would produce the disease; with some it amounted to a morbid fear and the knowledge that they were taking the drug during an attack added greatly to the gravity of the prognosis. I have seen a number of cases myself in which the attack developed soon after taking large quantities of quinine and at the time when the patients were profoundly under its influence. I recall two such cases occurring in Arcadia in recent years, one of whom was my own wife. She had had fever of a remittent type for several days which, owing to the healthy surroundings and apparent absence of causes for malaria, I was loath to believe of malarial etiology but, nevertheless, I had given her large quantities of quinine and while profoundly under its influence, she developed hemoglobinuria. She had a rigor while in this condition followed by nausea and vomiting, bloody urine and intense jaundice. The eyes, skin, soft palate and roof of the mouth were deeply jaundiced and she said all objects presented a deeply jaundiced hue. I discontinued the quinine and in two or three days the urine cleared up and all other symptoms disappeared except jaundice which lingered several days. She made a good recovery and has not had a recurrence of the disease up to this time. About two years ago a lad from Texas, fifteen or sixteen years old, while on a visit to relatives in Arcadia, had an attack of what I considered estivo-autumnal malarial fever. His liver and spleen were very much enlarged and there was a history of previous attacks of malaria and of one attack of hemoglobinuria. On the second or third day of his illness, during which time I had given him large amounts of quinine and when the physiological effects of the drug were marked and profound he developed hemoglobinuria. Bloody urine, jaundice, nausea and vomiting rapidly ensued and in a few hours the clinical picture of the disease was fully developed. I discontinued the quinine and in about forty eight hour all symptoms of the disease had disappeared, save jaundice and the lad safely recovered.

Lest I forget, I want to say here that I have never seen a case of malarial hemoglobinuria in a person who did not give a history of previous attacks of malaria or was profoundly under the influence of quinine at the time of the attack. The disease in the vast majority of cases is a fever of one paroxysm whether quinine be administered or not and seldom assumes the intermittent type and either ends in recovery or terminates in death in a few days. In an experience of more than thirty years, I have never seen but one case of the intermittent type. If, as has been suggested, altered blood conditions, tissue changes and increased blood pressure are factors in the production of hemorrhage it requires no stretch of the imagination to enable us to understand how quinine added to the already profoundly toxic condition might increase both the hemorrhage and the toxemia. The attack sometimes occurs almost with the abruptness of an explosion and is probably due to the sudden liberation of a large number of dead parasites into the blood stream and the rapid diffusion of their toxins into the system, and if this theory be correct, manifestly the gravity of the condition would be greatly increased by giving quinine at this juncture. Experience has taught me not to give quinine until after the urine has cleared up and not then unless the fever continues. Usually the fever gives way in two or three days after the urine becomes clear. In cases in which the fever continues beyond this time there are probably enough living parasites remaining in the blood to perpetuate the fever and in that event we may venture to give quinine with safety and even with benefit. It may appear paradoxical to admit that hemoglobinuria is a malarial disease but that quinine is not the remedy with which to cure it but such is, I believe the case. It seems to me that hemoglobinuria is an end result, or sequela if you prefer, of chronic malarial infection and probably a new toxin is elaborated and brought into play practically changing the pathology of the disease and at the same time requiring a change of therapeutics. At any rate, experience has convinced me that quinine is not the dependable drug in the treatment of hemoglobinuria it is in the ordinary forms of malaria. Other drugs are of far more value.

The prime indications of treatment are to maintain the renal functions and other avenues of elimination and to sustain the action of the heart. Renal and cardiac failure constitute the chief source of danger and in the majority of cases are the immediate cause of death. To promote general elimination, nothing is superior to small doses of calomel given at varying intervals according to the needs of each individual case. If there is constipation in the beginning of the attack, the treatment should be inaugurated by giving a brisk mercurial purge followed by smaller doses if deemed advisable. Calomel meets a number of leading indications. It more nearly influences favorably all of the emunctories than any other drug. In fact, it reaches out and influences directly or indirectly all the organs usually classed as emunctories, with the possible exception of the lungs and in this way fulfills an important indication in the treatment of hemoglobinuria. Opinions differ as to the best means of maintaining the renal functions. Some advise the use of diuretics while others earnestly oppose them. Those who argue against them, contend that the kidneys are already in a state of inflammation and exhaustion and need rest and should not be goaded by giving diuretics. If we were dealing with a true nephritis this would be considered sound reasoning, but instead there is good reason to believe that the pathology of the kidney is one of simple stasis or passive congestion with blocking of the uriniferous tubules in some cases from mucous coagula or other debris and I do not hesitate to register myself on the side of diuretics of the proper kind. To my mind, diuretics of a non irritating class are clearly indicated in order to flush the kidneys and maintain the flow of urine. Water, natures diuretic, the most valuable of all, should be given as freely as the patient can and will take it. At the head of the diuretic drugs stands digitalis. In the form of the fresh infusion it is the most reliable of all diuretic drugs while at the same time, it is the very best of heart stimulants, which becomes imperative in most cases at some time during the course of the disease. I am in the habit of combining with each dose of digitalis ten grains of potassium citrate and fifteen or twenty drops of spirits of nitrous ether in a sufficient amount of water which makes an admirable diuretic and diaphoretic mixture, meeting another important indication by its actions on the skin. If the fever maintains a high degree, I sometimes add one or two drops tincture aconite to the above mixture, which makes an efficient antipyretic without the depressing effect of the coal tar derivatives and other latter-day antipyretics. The ice cap and tepid or cold sponging, according to the degree of temperature, skillfully applied are valuable adjuvants. I have seen the flow of urine gradually return under this treatment so many times after having been suppressed for twenty-four or forty-eight hours that there is no doubt in my mind of its efficacy and I have as often seen digitalis supplemented with a little strychnine sustain and restore a weak and failing heart. Nausea and vomiting are obstinate features in many cases of hemoglobinuria and stand very much in the way of successful and satisfactory treatment and the relief of this troublesome feature is often very difficult and such things as cracked ice, sipping of hot water, oxalate of cerium, champagne and the like have been employed with very indifferent success. Finally, as a dernier resort, morphine may have to be employed hypodermically and sometimes affords prompt and permanent relief and in other ways seems to do the patient good. In the desperation born of despair in the management of intractable cases, I have sometimes been tempted to resort to stomach washes but owing to the usually extreme weak condition of the patient have not had the courage to undertake it. The treatment I have outlined, if faithfully and intelligently followed with the proper adjustment of nourishment and support, will, I feel sure insure the greatest number of recoveries in hemoglobinuria. The fact that suppression of urine with its resultant toxic effect constitutes one of the chief sources of danger should not be lost sight of and the kidneys should be carefully watched from the beginning and every legitimate means employed to maintain their function, for it is easier to maintain the flow of urine than it is to re-establish it after it has failed. I have never seen the flow of urine restored after it had been suppressed as long as forty-eight hours, although, I have seen patients live a number of days beyond that time with the bladder perfectly dry. I remember one instance in which the patient lived eight or ten days without passing a drop of urine. Less than two years ago I saw a case in consultation with my friend Dr. Hamner, in which the patient lived four or five days with complete suppression of urine.

In conclusion I want to utter a word of caution with regard to the use of diuretics. In advising this class of drugs, you will remember I said diuretics of the proper kind, implying that there are some improper ones. I had reference to stimulating and irritating diuretics such as are capable of inducing inflammation and of producing a real nephritis of which turpentine is possibly the best example. In our eagerness to maintain the renal functions this class of diuretics should be strenuously avoided.

INFECTION WITH THE FLAGELLATES.

By ELLIOTT C. PRENTISS, M. S., M. D., El Paso, Texas.

In the Southwest patients harboring the trichomona intestinalis and other flagellates are very frequently seen, in fact, forming a considerable percentage of all patients seen by a physician limiting his practice to gastro-intestinal work. In the last 112 private patients seen by me, and whose feces were examined microscopically, 12 or 10.7% had this infection. In many of these cases the pathological conditions present could have been accounted for by this parasite. These 112 cases represent the average run of patients seen by me during a period of 12 years in El Paso. Nearly all the cases acquired the infection in western Texas, New Mexico, Arizona, and Mexico, but there were a few from the Southern States. It is probable that these infections become more common as we go south.

There has been doubt in the minds of many medical men regarding the pathogenicity of the flagellates. Probably many persons harbor these organisms and never have symptoms resulting from them. Also many persons upon examination will show this infection, without it being related to the cause of the trouble, but I have seen a number of cases in which the symptoms could not be accounted for in any other way, and treatment directed against these organisms would as a rule quickly relieve the patient of symptoms which would not return until the organisms again became very numerous. This parasite certainly can, under conditions which we do not as yet fully understand, produce a very severe catarrh of the whole intestine, which may even end fatally.

Modes Of Infection—This is evidently indirectly from one infected person to another. This is most apt to occur from eating uncooked infected food, particularly raw fruits and lettuce, etc., used for salads. There is an unfortunate habit among many truck gardeners in this region of using the so-called ''natural fertilization'', that is, of saving their urine and feces and pouring them over the plants and on the ground where they grow. Open latrines, insects, lack of cleanliness at toilet, personal contact, and other similar factors are no doubt of importance. I have never seen the transfer of this infection from any patient under my care to another member of the family.

Biology—I will not take up the biology as this has been given in detail in numerous articles published recently. Most of the cases seen harbored only one flagellate, but double infections were noted. As far as I could tell, the variety of the parasite could not be predicted from the symptoms. The trichomona was by far the most frequently noted flagellate.

It seems that in many cases, as time passes, either the parasite gradually loses its virulence or immunity is developed by the patient, as symptoms gradually become milder and less frequent, a clinical cure resulting, even when some of the flagellates can still be found on examination.

Pathology—The localization of this infection is nearly always in the intestines, including all of the small intestines below the duodenum, and the whole colon. I have made gastric analyses on many cases harboring these organisms, both those presenting symptoms apparently due to them and those in whom the infection was incidental. In these many of the specimens were examined soon after removal, and in none did I find the flagellates, whether there was free HCL or not. None of the cases I saw developed liver abscess.

The pathological process, at least in the milder cases, seems to be a simple catarrhal condition with congestion of the mucous membrane. Some may have patches of ulceration, and some of the severe cases have reddening and inflammatory thickening of all the coats of the bowel. One fatal case I saw, and on whom autopsy was performed, had no ulceration, and the evidence of inflammation were not very marked. The principal changes were in the sigmoid flexure, and were especially thickening of the mucosa and submucosa. No other pathological condition was found that could account for death, which was without doubt caused by the diarrhea and toxemia due to the parasite. I believe that in many of these cases the flagellates burrow beneath the epithelium, and, in the more severe chronic cases, even invade the muscularis. The appearance of the bowel in the case mentioned below would suggest this. Also, if all the parasites were on, and not beneath, the mucous membrane, it should not be so difficult to completely eradicate them, as the drugs used are extremely toxic to them, and as administered certainly reach all parts of the mucous membrane.

In many cases, after symptoms have lasted for some time, there is evidently a secondary bacterial process engrafted on the original infection, which continues to give much trouble even after the flagellates have been nearly completely eliminated. As far as I could tell, peritoneal adhesions have not been produced in any case that I have seen.

A patient I saw in 1915 had shortly before had an operation, the surgeon suspecting a gall-bladder inflammatory condition. This organ was found to be somewhat reddened and was drained; but also the liver was slightly enlarged, with reddened surface, and the whole small intestine, begininng at the jejunum, and all of the colon were somewhat thickened and congested. After operation the attacks of chills and fever at irregular intervals, pains in the abdomen, and very obstinate constipation continued as before. The feces examined, resulting from salts, contained a seething mass of trichomonas. She only slowly improved under treatment, and is evidently still suffering from the infection, judging from a recent report from the mother. The Wassermann reaction was negative, and there were no malarial parasites in the blood. Soon after going home, she passed from under my observation.

Clinical Types—These are the silent, acute and chronic. The silent cases are those in whose feces the flagellates are found, usually only a few, and who have other conditions that account for their symptoms. It is just possible that the principal condition in some of these may have been caused by such a mild infection that was producing apparently no symptoms. A similar series of pathological events is not at all rare in digestive work, that is, a slight condition leading to another, and this in turn to others, each being more serious than the preceding.

In the acute cases diarrhea is the predominating symptom and I have only seen one with obstinate constipation.

In many of the chronic cases there is more or less looseness of the bowels nearly all the time; others have definite attacks of diarrhea with intervening periods in which the symptoms are intestinal fermentation, slight soreness or uneasiness in the lower half of the abdomen, especially at the cecum and sigmoid flexure, and lack of energy and other signs of intoxication. Some are free from symptoms between attacks, with regular bowels or slight constipation.

The acute cases and exacerbations in the chronic cases are more common in warm weather, although I have seen both in the cool and cold months.

Symptomatology—As the intestinal symptoms predominate in these cases, they will be taken up first. Diarrhea is present in practically every case. In the acute cases there are usually 8 to 12 movements a day, but there may be as many as 20 or more. When severe, they occur whenever fecal material gets into the sigmoid flexure, and rectum, and also when anything is put into the stomach, even water. In milder cases there are several movements soon after rising in the morning and 1 or 2 after each meal.

In chronic cases, during the periods of diarrhea, there are generally 3 to 7 movements a day, and in the intervals between attacks the bowels are usually regular or constipated, or there may be a slight tendency to looseness, in which case the feces are apt to be fluffy with gas.

Feces—During the diarrhea the stools are usually semiliquid and mushy, often fluffy with gas bubbles, or watery, and soft particles in them. Sometimes they are made up of nearly pure brown mucus, at times gelatinous and thick, occasionally so much so that a specimen for microscopical examination can be taken up with difficulty on a platinum loop. Usually the mucus is in clear pieces of variable size and is seldom bloody. In several cases I have seen casts of parts of the colon, and in one a cast of apparently the whole colon. The odor when there is diarhea is usually sour, seldom foul, with all variations between the two. Sometimes it is very much like that of sweet pickles, and I thought at one time that this was characteristic of severe infections, but have noticed it several times and when there were no flagellates present.

Microscopical—Flagellates are always readily found, sometimes in incredibly large numbers, the whole field being a seething mass of them. In some cases a few only are found in the ordinary stool following a test diet, or even in a diarrheal movement, and when a specimen from the same individual is examined, resulting from a dose of salts, they are moderately, or very, numerous. This would suggest that they cling tightly to the surface of the mucous membrane, and are washed off in large numbers by the outward osmosis resulting from the salts. I do not believe that this is due to increased propagation resulting from the laxative.

Leucocytes. In the severe diarrheal cases there are usually many present in the mucus and also in the liquid portion of the feces. With moderate diarrhea, usually recurrences of the chronic cases, there are some in the mucus and only a very few in the fecal material.

Red blood cells. These were noted in the severe, acute cases and also in recurring diarrheas, when the symptoms were marked, but were usually not present when the infection was slight or moderate.

Pain in the abdomen. This is seldom marked. In the severe acute cases the whole abdomen is moderately sensitive to pressure, even in the epigastric region. The pressure of a belt or skirt around the waist is uncomfortable. There is subjective uneasiness all the time. Occasionally there are cramps, but this usually only when there is much gas. In the diarrheal recurrences of the chronic cases the pain and tenderness are usually located around the umbilicus and over the whole lower abdomen, and in the intervals, if present, is in the mid-abdomen, or at the cecum or sigmoid.

Symptoms on the part of the rectum are not always present. Frequently some pain or discomfort before, during or after defecation are noted, but these are generally not marked. I have never seen them as intense as are observed in cases of amebic and bacterial dysentery. There may occasionally be slight nausea after eating in severe cases, but I have not seen vomiting result from it. In severe acute cases loss of weight is marked, being 1 pound or more a day. One patient lost 25 pounds in 3 weeks. In chronic cases the weight is usually maintained at less than the usual level. The strength generally runs about parallel with the weight except that it is more dependent upon the amount of toxemia present.

In severe cases anemia is moderate or marked. In the moderately severe or mild cases the hemoglobin is normal or only slightly diminished. Indicanuria is present in practically all cases and is usually marked. In severe cases it is very intense.

The general symptoms of toxemia are lack of energy and endurance, nervousness, irritability, tendency to worry; indefinite pains in the back, muscles and joints; insomnia; and in women disturbed menstruation. Other conditions, when present, are apt to be exaggerated, such as neuralgia, hysteria and chronic tonsillitis.

Diagnosis—This is, of course, made by finding the flagellates in the feces, with the elimination of other probable causes. If these organisms be found in moderate numbers in a routine examination, a dose of salts should be given and the resulting stool examined while fresh and warm. Large numbers of flagellates present with no amebae would be suspicious. A case of diarrhea with 8 to 12 movements a day due to the ameba histolytica would nearly always have the mucus at least tinged slightly with blood, with the organism easily found after a dose of salts, with definite evidence of ulceration, and with flagellates absent or present in only small numbers. When bacillary dysentery is suspected a culture of the feces should clear up the doubt. To confirm the diagnosis, administration of drugs injurious to the flagellates should quickly put a stop to the diarrhea, while it would not do so in cases of amebic dysentery, unless large doses of bismuth were given.

Prognosis—In the acute attacks the diarrhea is usually easily stopped by the administration of methylene blue, bismuth and other drugs, but it is quite another matter to completely get rid of the parasite. The organisms fasten themselves tightly to the epithelial cells of the mucosa, and most of them can be washed into the lumen of the intestine by salts and killed by a number of remedies, but enough of them usually remain to raise a large progeny and make the case chronic. Very rarely can all of the parasites be readily killed. After the case has lasted some time a catarrhal condition of bacterial origin frequently arises. This should predispose to appendicitis, gastric and duodenal ulcers, and gall bladder infections, but I have not seen any cases of these latter conditions that I could trace to this cause.

I have seen two fatal cases in which the diarrhea was uncontrollable, but this was before I knew of methylene blue, and the effects of large doses of the bismuth salts and calomel. I am sure that neither of these cases had amebae and that the flagellates were the sole cause of the trouble.

Treatment—When it is certain, or strongly suspicious, that the flagellates are responsible for the condition of the patient, a persistent effort should be made to get rid of them. It is usually fairly easy to get a clinical cure, without killing all the parasites present, but in this case, upon discontinuance of treatment, the organisms increase greatly in numbers and the symptoms return. A number of drugs and methods of treatment have been advised by clinicians of experience, and I have given nearly all of them a good trial, without satisfactory results. The limiting of the diet has no curative effect on the infection. During the period of active treatment the diet is best cut down to soft boiled and poached eggs, milk, bread, toast, butter and water. Between these periods, in cases of failure to cure, the diet is adjusted to the patient's digestive capacity.

Enemata are not curative, as the infection exists in the small intestines as well as the colon, but they can wash away the parasites in the lumen, and drugs put into the water can kill many or all adhering to the mucous membrane of the colon. During active treatment 2 enemata a day are advised, each of 3 pints of water containing 1-5 grain of copper arsenite to a pint. This concentration is much greater than is needed to kill the parasite, and does not irritate the colon.

I use salines regularly in acute cases and in periods of intensive treatment in chronic cases. They act by washing the parasite off the mucous membrane and carrying them away. After a dose of salts, when no other medication is given, the flagellates in the feces are very active, so evidently there is no antiseptic effect. When given in conjunction with a drug antagonistic to the parasite, the absorption of the drug is greatly diminished, and it has its full therapeutic effect.

Specific Drugs—In my earlier experience I used powdered ipecac preceded by large doses of laudanum, daily injections of emetine, and alcresta tablets. Patients improved a little on this line, but reached the limit of improvement in a few days, and the diarrhea would not be checked. On that account I have discontinued their use in these cases. Recently I have tried bismuthous-emetine-iodide, (B. W. & Co.) which has been extensively used in Europe in amebic cases, with the same result. I have used Chaparro amargoso a great deal. The fluid extract, in 1 to 2 teaspoonful doses, 3 to 5 times a day, according to how well the patient can take it, is decidedly beneficial, but will seldom rid the patient of the parasite. It is useful both in intensive treatment and in the intervals.

Iodine is beneficial, and in recurrent cases with slight diarrhea and fermentation, will frequently relieve the patient of symptoms in 4 to 6 days. It is best given in 5 to 10 drop doses of the tincture in milk into which bread or crackers have been placed, or in Mellin's Food and water, using enough to completely bind the iodine. In this way the iodine is released gradually by digestion of the food used, in just the part of the bowel where its action is most needed. Larger doses than 10 drops usually cause burning in the stomach, but some patients can take as many as 25.

Bismuth subnitrate and subcarbonate have a decidedly antiseptic effect on the flagellates but only when given in very large doses, about one rounded teaspoonful at least 4 times daily. In one very severe case reported below, the diarrhea was uncontrollable until this was resorted to, and the patient would probably have died if this had failed. The diarrhea was suddenly stopped, and as a saline was not then used, there were marked symptons resulting from the absorption of toxines from the destroyed bodies of innumerable dead flagellates. The bismuth did not kill all of the parasites in this instance, and the case became chronic. I have not had a case in which the bismuth salts killed all of the parasites. I generally use a mixture of the two salts, ¾ of the subcarbonate and ¼ of the subnitrate, to avoid the nitrite poisoning that might result from too large a dose of the subnitrate.

Methylene Blue was first used by Castellani, with good results. I did not know of its use until I had seen the two fatal cases and the one above mentioned in connection with the bismuth salts. Next to the copper salts, it has as great a killing effect on the flagellates as any drug known. In acute cases, and in the diarrheal recurrences of chronic cases, it will put a sudden stop to the diarrhea, having this effect in several days, unless the diarrhea be due largely to secondary bacterial entero-colitis. This drug sometimes temporarily increases the amount of mucus in the feces, in these latter cases.

It may be used in several ways. Given in 5 grain doses after meals it will control the recurring diarrhea of chronic cases, and also the fermentation between attacks, and makes a good preparation for intensive treatment. In these intensive periods I use it in 5 grain doses about 1½ hours before breakfast with a dose of salts, and at bedtime with a large amount of water. When given with salts in the morning the flagellates are washed into the lumen of the bowel, where they are readily acted upon by the drug, and the absorption of the blue is much diminished, thus keeping the solution of the drug as concentrated as possible. Given at bedtime, there is very little food, if any, left in the stomach, to diminish the concentration of the solution by staining of food particles and the absorption of the watery solution by a mucous membrane gets the drug into closer contact with the flagellates that are adhering to the epithelial cells of the small intestine than occurs when salts are given, thus giving probably the maximum effect.

The disadvantage of using methylene blue is the strangury produced. Even 5 grains will often cause very disagreeable burning micturition, and 5 grains 3 times daily for several days is almost unbearable.

Dr. H. L. McNeil of Galveston, Texas, (1) recommends the use of a solution of methylene blue, quinine sulphate and HCL, administered by duodenal tube in these cases. He follows each such flushing with an enema of methylene blue, 1 to 5000. I have not used this method, as the drug when given by the stomach is not absorbed by that organ, at least to any considerable degree, and passes into the duodenum without being altered by the HCL of the stomach. He claims to cure most cases by 3 such flushings.

Copper salts are extremely injurious to the flagellates, being fatal to them in a dilution of 1 part to 5,000,000 at least, and probably as high as 1 to 20,000,000. I use the arsenite, and give it in doses of 1/100 to 1/50 grain 3 or 4 times daily. It usually has a decidedly good effect therapeutically, but does not kill all of the parasites, as it is apparently readily absorbed and does not satisfactorily reach the organisms adhering to deep folds of the mucous membrane.

Calomel I have used in a number of cases, two of which are reported below. A cure was not obtained, but the parasites were greatly reduced in number, and the toxemia was much benefitted.

Dr. Anthony Bassler, of New York, (2) reports success in curing this infection by means of hypertonic saline solutions given by duodenal lavage. He administers daily a solution containing per liter, 9 grams each of sodium sulphate and chloride, 4 c. c. of a 10% alcoholic solution of phenolphthalein, and 1 teaspoonful of sodium bicarbonate. I have used this method, but have not been able to kill all the parasites by this means. However the cases were greatly improved.

Case 1. Male. White. Age 50. Railroad section master in Florida. First seen June 1st, 1914. Except for slight cough and expectoration the history was negative to the present illness, which began just after Christmas, 1913. At first there were 3 or 4 liquid or watery movements a day, without pain in the abdomen, and he saw no mucus or blood in the stools. This gradually increased until he was having 3 to 6 movements in the day, and 8 to 10 at night. There were no cramps and no tenesmus. At this time he noticed mucus in the stools, but no blood. He did not improve under treatment, and lost 3 pounds before coming west.

Present condition. Appetite good; considerable gas formation in stomach and intestines; the taking of food, or even water, into the stomach very soon causes a movement. He has about 8 movements a day, and the same number at night. Feces watery, have very bad odor, and have some mucus, but no blood. Rectum is negative. He sleeps poorly; occasional dizziness; slight edema of feet in the morning, increased on exertion during the day, and is more noticeable in the right leg than in the left. No fever; strength is very poor. Dyspnea easily; rapid pulse. Slight cough; small amount of white expectoration daily. No pain in chest.

Physical examination. Height 5 feet, 10 in., weight 105, T. 98.4°, P. 124; irregular, intermittent. Appearance anemic. Slight consolidation of both lung apices, but these are apparently healed lesions. Abdomen—slight tenderness of middle and lower abdomen, most marked at end just above the umbilicus. Liver, spleen and colon negative.

June 2. Took a dose of salts and passed feces in the office for examination. Moderate amount of mucus; guaiac reaction of occult blood negative; microscopically, numerous flagellates; a few leucocytes; no amebae or red blood cells. Treatment:—bed; diet of toast, butter, milk, and water. Epsom salts early morning. One-half grain of emetine injected twice daily for 7 days. Enema twice daily of 3 pints of normal saline solution. Strychnine 1/30 grain 3 times daily.

June 6. Change enema solution to 3 pints of water with 3 teaspoonfuls of quinine hydrochloride, followed by normal saline to wash away excess of quinine; this was continued for 4 days, and then 1 a day for 7 days. Diet slightly increased. The condition gradually improved; movements were reduced to 4 or 5 in 24 hours; the odor greatly diminished, and the visible mucus stopped. He ate very little, and lost some in weight and strength.

June 15. Urine: Color, amber; Sp. gr. 1.019; sediment, great deal, light, white; no albumin or phosphates; urates, trace; no sugar; indican, intense. Microscopical, negative.

June 25. Fl. ext. chaparro amargoso begun, 1 teaspoonful 4 times a day.

June 30. Bowel condition improved. July 9. Diarrhea stopped and his condition is much better. Having only 1 movement a day, in addition to a cleansing enema. He died on August 25, and I was told that, considering himself all right he had stopped treatment, and soon after became associated with Christian Science. The trouble soon returned, and he died without treatment.

If this had been a case of amebic dysentery, I would certainly have found the parasite, considering the severity of the case, and the number of stools examined. A chronic bacterial dysentery would have shown a large number of leucocytes and red blood cells, and a tuberculous ulceration of the bowel would not have improved to any extent under this treatment.

Case 2. Female. White. Age 34. First seen on December 31, 1918. History negative until 23 years of age, when she had an acute attack of diarrhea in Prescott, Arizona. There were 15 to 18 movements a day, without blood or mucus in the stools, and pain in the lower abdomen. She recovered in 2 weeks. At this time she weighed 123 pounds; loss of weight and falling of the hair began then. She remained well until two winters later, when she had an attack that lasted 2 days. There were 16 movements a day, and slight pain in the abdomen. Castor oil checked this attack, but her bowels were not normal again for 3 weeks. Seven years ago she had another attack, which lasted only a few days. After that she usually had an attack about every 2 or 3 months, lasting 2 to 5 days, which were relieved by cutting down the diet and taking castor oil. She was free from symptoms between the attacks. These gradually increased in frequency, until by the beginning of last summer she was having attacks about every 6 weeks. Summer before last there was an attack, during which she noticed bloody mucus in the feces. Last August she had an attack lasting 4 days in which she had 8 movements in a day, and 4 to 6 at night. with pain in the rectum and bloody mucus in the feces. She usually recovered strength rapidly after attacks, but did not do so after this one. Since then she has lost a great deal in weight and strength, has had gas formation in the intestines, and been constipated. Two weeks ago another physician examined her and found numerous flagellates in the feces, but no amebae; haemoglobin was 90%.

Present condition: Tongue coated; poor appetite; stomach negative; considerable borborygmus; no pain or soreness in the abdomen now; burning sensation in rectum when she takes an enema; poor strength; head occasionally feels light; is very nervous.

Physical examination: Weight 93; T. 99.2°; P. 84; color, not good; hemoglobin 90%; heart and lungs negative; stomach is in a slightly lower position than normal and there is splashing on shaking; slight discomfort in lower part of epigastric region on pressure; slight pain to pressure at and just below the umbilicus; tenderness at descending colon and sigmoid flexure, and pressure there causes slight pain at the cecum. Stomach contents, result of test-breakfast—small amount of thick white mucus in specimen; odor slightly sour; no occult blood; HCL, 11 degrees; total acidity, 24 degrees; microscopical, made immediately after removal—no flagellates found. Examined the feces resulting from a dose of salts twice, (passed in office)—mucus in small clear pieces and a few small white shreds; few epithelial cells and leucocytes in the mucus; no red cells; no amoabae; flagellates fairly numerous both times.

She has been under constant treatment since then. The drugs used were methylene blue, arsenite of copper, chaparro amargoso, tincture of iodine, calomel and sodium phosphate; liquid petrolatum when constipated, and iron for the anemia. She at times passed casts of the colon, one of which was more than a yard long. The methylene blue increased the mucus formation. On the possibility of her having amebae that I could not find, I injected 2/3 grain of emetine for 6 successive days, with no benefit. Improvement gradually occurred, but control stool examinations still showed the flagellates. On April 28 to May 12, at the bedtime, 10 grains of calomel were taken, followed each morning by sodium phosphate and 1/25 grain of copper arsenite. On May 16 feces resulting from a dose of salts were examined and flagellates were present, but slightly fewer than before. On May 19 at bedtime she took 5 grains of calomel, followed by sodium phosphate with 1/25 grain of copper arsenite in the morning, and after 5 movements took an enema of 3 pints of water containing six 1/100 grain copper arsenite tablets. On May 23 examination of the feces showed the flagellates present, but much reduced in numbers. On May 23 at bedtime she took 10 grains of calomel; early next morning a saline with 1/25 grain copper arsenite, and after several watery movements, an enema of 3 pints of water with 15 grains of methylene blue in it. On May 27 the feces were examined after a saline, and flagellates were found, as on May 23. The feces have been examined repeatedly since then, with the flagellates always present.

Case 3. Male. White. Age 42. In the summer of 1914 he had a very severe acute infection with the flagellates. There were 8 to 10 movements a day until the condition was checked, which was in about 3 weeks. There were usually at least 2 in the morning before breakfast, 1 or 2 after each meal or putting anything in the stomach, even water, and 1 or 2 in the night. The feces were usually soft and mushy, occasionally watery, and a few were of pure, very thick mucus, much like thick gelatine, and so tenacious that it was difficult to get a platinum loop into it for removal of a microscopical specimen. Leucocytes and red cells were present, but not nearly as many as would have been found if there had been amebic ulceration. Flagellates were extremely numerous and no amebae were found, although numerous specimens were examined, both from diarrheal stools and as a result of salts. There was marked sensitiveness, rather than pain, all over the abdomen, both subjectively and to pressure. There were discomfort and slight tenesmus in the rectum. He lost 25 pounds in 3 weeks, and greatly in strength. One grain of emetine was injected daily for a week, with only slight improvement. Alcresta ipecac seemed to irritate. Chaparro amargoso diminished the diarrhea, but did not stop it. Finally 1 rounded teaspoonful of bismuth subcarbonate was given after each movement, with the result that the diarrhea was suddenly checked. Then began an apparent rheumatism of both hips; the pain was moderate only, and was accompanied with rather marked weakness of the thigh muscles, so that walking was difficult. Flagellates have been found at every examination of the feces since then, but no amebae. There have been many attacks of slight looseness of the bowels with fermentation, and also a pronounced diarrhea, especially in the warm months. Between attacks there has frequently been intestinal fermentation, inability to digest anything like a normal diet and constant marked indicanuria. General symptoms of toxemia have been marked and constant: diminished energy and strength, nervousness, irritability, subnormal appetite, and occasionally slight fever.

He has used methylene blue, copper arsenite, chapparro amargoso, iodine, bismuth-emetine-iodine and calomel; these alone and in conjunction with sodium phosphate. All of these, except emetine-bismuth iodine, fairly readily controlled the diarrhea and fermentation, reduced the intoxication somewhat, and markedly reduced the number of flagellates present. The one that had the quickest effect was methylene blue. The intestinal symptoms have been slight only for several months, but an examination of the feces, following a dose of salts, showed flagellates still present. Calomel was administered to this patient as follows: 10 grains on May 10, with salts the next morning; flagellates found 2 days later after a dose of salts. Beginning with May 18, 5 grains were given every night for 4 night with saline in the morning; flagellates still present. On May 25 ten grains given at 9:30 A. M., and also at 10 A. M., on empty stomach, followed by large doses of saline at 1:30 and later. May 27 no flagellates found in a natural movement, but on May 28, after dose of saline, a few were found, but these were very much fewer than at previous examinations.

Since the first dose of calomel this patient's general condition has improved greatly. Almost for the first time since 1914 he had energy and his strength had increased; there was very little fatigue even after a hard day's work; and he was able to think more clearly and his memory improved.

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THE IMPORTANCE OF BLOOD SUGAR ESTIMATION IN THE DIAGNOSIS AND TREATMENT OF DIABETES.*

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With the advent of a routine urinalysis as a prime requisite in practically every medical examination, the number of cases of diabetes found has grown so enormously in the past decade that the actual importance of this serious disease is just beginning to be appreciated by the medical profession. Diabetes is certainly one of the conditions where the earliest possible diagnosis and prompt institution of correct dietary treatment give results in actual years of life to the patient. We are only too prone to excuse the finding of a little sugar in a patient's urine as being due to dietary excess. Practically every individual who shows glycosuria at any time is at least a potential diabetic. More accurate study of the intake, metabolism, tolerance, and excretion of carbohydrates in these individuals furnishes information which usually leads to earlier correct diagnosis. Of the many necessary studies in a given case, that which furnishes information as to the amount of sugar maintained in the circulating blood is of paramount importance. Developments in recent years of accurate and yet simple methods of making these determinations have placed blood sugar determinations within the reach of most clinical laboratory workers.

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In order to bring out more clearly the importance of blood sugar estimations, it may be useful to review in a general way the fundamental principles of sugar metabolism as we now understand them. Briefly, starches and polysaccharides of our diet are converted into such simple sugars as glucose and levulose in the processes of digestion. These are absorbed directly by the capillaries of the intestinal villi, which lead into the portal vein. There they are brought into contact with blood which contains the internal secretion of the pancreas. As a result of the presence of this internal secretion from the pancreas, the sugar can be taken up by the liver and stored as glycogen whenever the concentration in the blood goes above the normal figure of 0.08% to 0.12%. Between digestive periods the glycogen is reconverted by the liver into glucose and is turned back into the circulation as needed.

In order that sugars may be taken up from the blood stream by the liver first, or the muscles and organs later, the tissues must be either activated by pancreatic secretion, or what is more probable, the sugar must combine with the pancreatic enzyme, in which combination it is able to pass into the muscle or organ where it is burned to furnish energy. In order that the supply of sugars may remain approximately uniform in the blood, not only does the liver store up surpluses, but if the sugar content goes beyond this point the excess may normallly be excreted by the kidneys. The degree of concentration in the blood stream at which the kidneys begin to function as a spillway is spoken of as the renal threshold. Normally the renal threshold is from 0.16% to 0.18% of blood sugar. If more carbohydrates are taken in than the liver can store, the concentration of the blood increases slightly above these figures and the excess is excreted in the urine with an accompanying polyuria.

A blood sugar above 0.18% is seldom found in a normal individual. In the presence of a large excess of carbohydrates in the intestinal canal, the digestion and absorption of these substances are slowed down before an increase in blood sugar above normal limits is reached.

There is a small percentage of individuals, however, in whom digestion and absorption continue to such a point that sugar appears in the urine. These are cases of true alimentary glycosuria only when the renal threshold is normal, the liver function is normal and there is no intolerance for sugar.

We may now consider the prime factor of the mechanism of the disordered metabolism in diabetes—the intolerance for sugars.

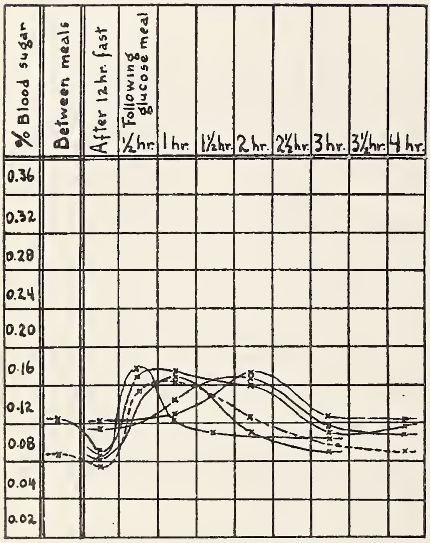
In normal individuals the energy that may be developed from the burning of sugars in the muscles is directly dependent upon the amount of sugars available. In true diabetics the ability to get sugars stored up by the liver, or taken from the blood into the tissues where it is used, is just the opposite to that found in normal individuals. That is, that the ability to use sugars is indirectly proportionate to the amount of sugars ingested and absorbed into the blood stream. The pancreatic internal secretion, being produced in a smaller amount than normal, is probably only capable of combining with or activating a smaller quantity of sugar. In the presence of a larger quantity of sugar this weakened action is, so to speak, diluted, and the availability of sugars is disproportionately lowered. It is for this reason that in diabetes we have a higher renal threshold, an accumulation of blood sugar, and a starving musculature. It is only when the blood sugar approaches the normal figures that sugar begins to be made available to the tissues, so that the estimation of blood sugar serves its most useful purpose in the control of a known case, and ranks in importance only next to the general clinical condition of the patient as an index of the balance of carbohydrate intake against tolerance.

The sugar content of the blood is much more reliable as an index to the general tolerance and condition of the patient than that of the urine. Not that urine sugar estimations should be dispensed with, but they should rather be supplemented by an occasional blood sugar check. I have seen several diabetics with a gradual loss of tolerance in whom the amount of urine sugar remained fairly constant or was constantly absent while on the prescribed diet. One long-standing case in particular was marked by a fall from the usual urine sugar reading to an occasional trace over a period of many months, during which time the blood sugar rose very high. This case terminated in coma of several weeks' duration and died, being entirely free from urine sugar all the while.

In the diagnosis of diabetes it is often difficult to arrive at a correct diagnosis without a long clinical and dietary study. The finding of a hyperglycemia (blood sugar above 0.12%) not caused by dietary excesses justifies a fairly certain diagnosis of some disorder of carbohydrate metabolism. A reading above 0.2% justifies a diagnosis of diabetes, barring, of course, the possibility of a technical error. It is well to repeat the reading for verification before making a final diagnosis.

The diagnosis of an early or particularly a mild case of diabetes often leaves a good deal of uncertainty under ordinary conditions. This is most unfortunate for the patient, as it requires a thoroughly convinced physician to keep an apparently healthy individual on a restricted diet. Here a study of the sugar metabolism is of great value. The rise and fall of the blood sugar taken at periodic intervals following a glucose meal on a fasting stomach when plotted to form a curve shows with marked accentuation the delayed absorption, the maintained hyperglycemia, and the delayed fall to the particular individual's normal height of concentration.

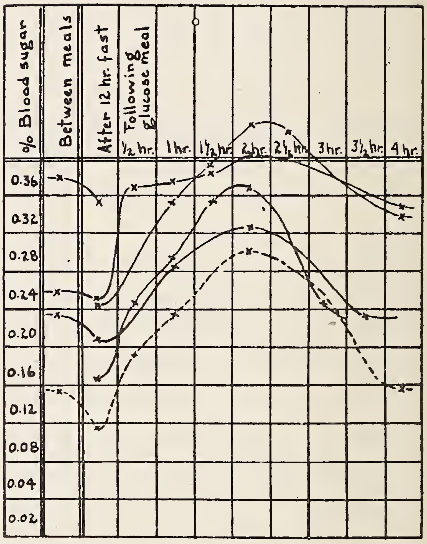
Blood Sugar
Glucose Tolerance Tests.
Table I



—— Normal Curves.
------ Renal Glycosuria Curve

Note the uniformly low rise of sugar %, and the early return to normal values

Blood Sugar
Glucose Tolerance Tests.
Table II



—— Diabetic Curves.
----- Early Diabetic curve

Note heighth of sugar %, and length of time required to return to an individual normal.

A great deal of stress has been laid on the determination of the renal threshold by correlated blood and urine sugar estimations following a glucose meal. The importance of these figures for diagnostic purposes shown in the cases that I have studied has been practically nil in any except frank cases of renal diabetes. The reasons for this are principally because the tolerance of mild diabetics varies so much, the rise in the renal threshold is often very slight, there is quite a percentage of error in the blood and urine sugar estimations, and finally because the urine collected represents usually a previously falling or rising curve.

There are a few individuals in every series of cases who, after all is said and done, remain borderline cases so far as an uncontroverted diagnosis is concerned, cases that show some slight fault in metabolism in which blood values and intolerance are only a little beyond the normal figures. These, I believe, are correctly diagnosed potential diabetics. I allude to these cases to emphasize the fact that the blood sugar estimation is merely another human laboratory test. It cannot be considered an infallible means of diagnosis and should be considered as diagnostic only when the picture is beyond question. Where less diagnostic findings are obtained the importance of the examination lies in the ability of the physician to properly interpret results in the light of such other findings as may be present in the given case.

In conclusion, I would like to call attention to a grave error that is occasionally made. The majority of physicians and laboratory specialists direct a twelve hour fast (over-night and before breakfast) for the blood sugar estimation. The great majority of early or mild diabetics will give blood and often urine readings within normal limits under just this small degree of restraint. I have seen several cases that later showed a true intolerance for sugar whose physicians had been misled by a single examination giving a normal blood sugar figure. In these cases a study of the sugar metabolism as shown by the glucose tolerance test is of paramount importance.

DISCUSSION

Dr. I. I. Lemann, New Orleans: Dr. Johns has very properly laid the greatest emphasis on the fact that individuals showing sugar in their urine from time to time are not to be regarded as simple cases of alimentary glycosuria but as potential true diabetics. That dictum is wise and I think in the future will prove to be of the greatest value in the care and treatment of diabetes. He has reviewed briefly the physiology of carbohydrate metabolism. There are several things I would like to add to what he has said in order to elaborate them. According to Allen's notion, sugar glucose behaves differently in the bodies of normal individuals than in those of diabetics. In the normal individual the glucose behaves as a crystaloid, or behaves as a colloid, according to the method by which it is taken into the body. If one injects glucose solution directly into the blood stream of a normal individual, glucose appears promptly in the urine of that individual. On the other hand, if sugar is taken by mouth or by injection instramuscularly, the sugar does not ordinarily appear; unless the economy is overwhelmed with sugar, sugar does not appear in the urine. On the other hand, in the case of a diabetic, whether you give sugar intravenously or by mouth, or parenchymally, sugar appears in the urine, so something happens in the body of the diabetic which does not happen in the body of the normal individual. The normal individual has some substance which grabs hold, as it were, of the sugar when it is introduced in any other way than directly into the vein and binds the sugar to the tissues. There is something in the nature of an ambocepter, as Allen suggests. This grasping, this binding substance, is absent in the diabetic and because of its absence the sugar is not bound to the tissues and overflows through the kidneys. In the case of the diabetic, therefore, we are reproducing all of the conditions of the kidney function tests in the ordinary individual. If you are making the kidney function test in a normal individual by means of glucose, one judges the ability of the normal condition of the kidney by the fact as to whether sugar appears in the urine or not. A bad kidney will hold back the sugar, and a good kidney will filter it through. In the case of the diabetic he already has an excess of sugar. He has treated himself with a glucose injection, and if he has a bad kidney it will hold back that excess of sugar. If he has a good kidney, the excess of sugar will go through. In other words, a diabetic with a bad kidney may have no sugar in his urine and still be in a bad way. Such was the case of the man who had a diabetes of very high grade, a man who died in coma, yet had no sugar in his urine because his kidneys were so bad they could not excrete the excess. The renal threshold is a matter of extreme importance in judging of the condition of a diabetic patient.

Dr. S. C. Jamison, New Orleans: The subject has been so thoroughly covered by Dr. Johns and by Dr. Lemann that there is very little left to say.

In speaking of the various fluids getting through I would call attention to the fact that the old controversy over the presence of sugar in the spinal fluid appears to have been definitely settled. For years we have known the spinal fluid reduces Fehling's solution, and in the average text on the subject this fact is mentioned, but no outspoken statement has been made until recently that this reduction of Fehlings solution was actually due to glucose. It has been shown recently that the substance present rotates polarized light; that it is a ferment which reduces Fehling's and other solutions for sugar and there seems to be no question that glucose is the substance which is responsible for the reduction. Furthermore, it has been shown that in diabetes mellitus the glucose and spinal fluid are greatly increased in quantity. We know that this glucose very probably largely furnishes the nourishment for the delicate cells in the central nervous system. I think future research will show that perhaps in a great many cases the nervous symptoms in diabetes are due to a perversion of the quantity of glucose in the spinal fluid.

TWO CASES OF LEPROSY CURED BY ANTHRAX VACCINE.*

By J. N. ROUSSEL, M. D., New Orleans.

Since the time of Moses, leprosy has been the bug-bear of the human race. Little has been left undone in an attempt to cure the unfortunate victims, and I think up to this writing, little has been accomplished. Ever so often some one has come out with the startling announcement that he has at last found a cure, but it has not taken long to have it demonstrated to their satisfaction and that of the medical profession, at large, that while their observations were fairly correct their deductions were wrong.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

It has not been an uncommon observation that a spontaneous cure of leprosy has occurred, but as compared with the vast number that persist, unabatedly, to the end of time, as far as the victim is concerned, we can safely say that the abortive cases do not compose a large percentage of the whole. Hansen, of Norway, states that of 8453 lepers who have been recorded in the leper statistics of Norway, from 1856 to 1895 there are 126 cases tabulated as being cured. This is just one and one-half per cent of the whole, which is not encouraging, to say the least.

What shall constitute evidence of a cure, is of course a moot question.

Thin says: "If a patient loses all symptoms of tubercular leprosy and enjoys good health but retains some slight symptoms of nerve leprosy of an unprogressive character, the case may be considered as much of a case of cure as a case of phthisis in which all symptoms have become arrested, although the patient is left with a patch of fibroid tissue in his lung in which doubtless the spores of tuberculosis are embedded." Of course, many of the profession are unwilling to accept this, and while admitting that the disease may be permanently arrested, deny that the patients are cured, unless it can be demonstrated microscopically that no bacilli exist in any of the tissues. This, of course, is ideal, and should be the attitude of the profession, if it were not for the unfortunate fact, that in a very large percentage of the cases (nearly all of the maculo-anesthetic cases) the demonstration of the presence of the bacilli appears to be extremely difficult, if not impossible at any time.

This brings us to the question as to whether we should make a diagnosis of leprosy in cases in which the bacillus is not demonstrable. I think, we undoubtedly should, but I shall not quarrel with my opponents on this score.

With these few remarks, I wish to report two cases of leprosy clinically cured by the hypodermic use of the anthrax vaccine. I mean cured, in that they are entirely free of any of the cutaneous or nerve manifestations of the disease.

The vaccine employed was liquid anthrax vaccine made by the H. K. Mulford Co., for the immunization of animals against anthrax or charbon, which, I understand, contains the living anthrax organism.

Case 1.—Mrs. S. A. about forty years of age applied at the Touro Clinic in the early part of February 1919 for treatment of her skin.

On examination we found numerous lesions on her face and many on the arms and legs and body, only a few of which were anesthetic. They were mostly tubercular infiltrations forming rather large tubercular masses from the fusion of contiguous tubercles. There were a very few macules which were mostly on her body. There was a pronounced leonine expression and her voice was husky.

A clinical diagnosis of tubercular leprosy was made after which she was sent to Dr. F. M. Johns for findings. Dr. Johns reported acid-fast bacilli found. She was given 1/4 CC. liquid anthrax vaccine on February 25, 1919 and twice a week thereafter in gradually increasing dosage up to 1-1/2 CC. until April 3, with no apparent effect except a slight sensation of chilliness which occurred about five or six hours after the injection.

On April 3rd. all of the lesions were acutely inflamed and had changed their morphology. The infiltrations had disappeared and in their stead there were large nodules about the size of a hickory nut. They were sharply limited, firm and dense. On April 7th., four days later, her general condition was apparently worse. She complained of very stiff joints and general uneasiness. The appearance of the nodules had not changed.

I did not see her again until March 2nd. 1921, when she appeared entirely well and reported that the lesions had begun to disappear in June 1919, about two months after stopping the vaccine, and were all gone in a very short time.

Case 2.— March 2, 1919. Mrs. J. T. D. applied at the Touro Clinic for the treatment of a skin condition which she claimed appeared about six weeks before.

Upon examination we found five macules on right arm, one large infiltrated mass in palm of right hand one macule on left arm and several on legs and body. She complained of a severe neuritis in right arm, but otherwise appeared to be well.

A clinical diagnosis of macular-anesthetic leprosy was made, and she was sent to Dr. Johns for findings. No bacilli were found. She was given the anthrax vaccine every four days, untill April 15, 1919, at which time, she appeared worse. The lesions were more inflamed and had apparently changed their morphology.

I did not see her again until February 3rd. 1921, when she applied for treatment for some trivial skin affection. Upon inquiry she told me that the leprous lesions had all vanished during the summer of 1919. She appeared well and on examination revealed absolutely no symptoms of her former disease.

In conclusion, I wish to say that the use of anthrax vaccine in leprosy is not original with me.

It was first suggested by Dr. Campos of the State of Columbia in South America, who in turn does not claim originality, but who does not disclose the name of the originator of the idea.

Whether the vaccine will cure all cases of leprosy, remains to be seen, but that it will cure some, I am certain.

DISCUSSION.

Dr. H. E. Menage, New Orleans: Dr. Roussel's paper is particularly interesting to me, but I had no idea from the preliminary remarks he made that he protected himself against a controversial argument so thoroughly as to make a discussion of it almost useless.

To go over the history of the cure of leprosy would be out of the question in five minutes. The main thing that occurs to me is to congratulate him on his attempt to cure this particularly horrible disease in any way whatever, even by the use of a club the size of the anthrax bacillus. He mentioned the report of two cases, and if I interpreted his remarks correctly, one case was positive from a bacillary standpoint. That case I will consider as a case of leprosy, unmistakable and proven, and any changes in the clinical characteristics of that case from any method of treatment are worthy of consideration. I also agree with him that in many cases of leprosy the organism cannot be demonstrated microscopically, and I feel as he does that although not proven microscopically the disease may be leprosy. On the other hand, I must feel that when we are using the word "apparent cure" in leprosy, we should have a true, proven, undoubted case of the disease, and not one that might have been leprosy from clinical judgment alone.

I realize that in the examination of many cases in the hospital and in private practice some of the cases we believe to be leprosy but cannot prove it. I also know there are other diseases that manifest and give clinically the skin symptoms of leprosy that can not be differentiated easily from leprosy, for instance the premytotic dermatitis of mycosis fungoides, Leukemia Cutis, etc., where even experts throw up their hands and much depends upon the microscope.

In regard to the second case, the organism was not found. I believe I understood the doctor correctly in making that statement. Therefore, the value of apparent cure in this case would be to my mind of much less importance because the positive identity of the disease had never been proven.

Again, it occurs to me that many cases of leprosy run a course not much different from the ones reported and appear clinically well in the course of time. We also agree with him that a great many drugs and many other measures will produce the same retrogression in the disease. Therefore, I believe the title of the paper is a little too strong and the word "cure" too promising at this time. If Dr. Roussel had stated that the disease had been arrested as many other similar types of disease have been arrested before, we might have agreed without discussion upon the results obtained.

I have in my hands a little pamphlet by McDonald from the Hawaiian Islands, and recently we have seen in the public press a report of 40 or 50 cases of leprosy apparently cured. These cases were examined microscopically to the limit, but the reports required the absence of the organism first or the presence of a degenerative type of organism showing that the organism is dying out. They further require a period of probation I think two years to determine whether the case would not relapse into active leprosy.

In the last dispatches a little girl is reported to have been cured. A search for the organism was made for hours and days. Every patch in the body was examined for the organism and was reported negative until in one patch in the skin the organism was found in great numbers. This case was taken out of the list and sent back to the hospital for further examination and study of the organism.

The paper although extremely important and interesting is so far as I can see a repetition of similar treatments for the disease discussed for so many years pro and con and usually without definite results. It is my earnest prayer however that the Anthrax Bacillus tested by Dr. Roussel will prove not only an apparent cure but one which will forever be a blessing to the human race.

Dr. Ralph Hopkins, New Orleans: I think we have listened this morning to a paper that will mark an epoch in the treatment of leprosy if the apparent cures remain permanent cures. Some experience with the treatment of leprosy has made me rather hopeful of remedial measures that will provoke the sort of reaction that Dr. Roussel has described as following injections with the vaccine of anthrax. Improvement has been noted in reactions following the use of a number of different methods of procedure. In the first place, there exists in a normal case of leprosy certain periodic exacerbations of the disease accompanied by fever, sometimes the temperature being as high as 106, which is not unusual, and during the febrile period most of the macules and a great many of the nodules behave precisely as described by Dr. Roussel. We have noted a number of times that following this leprosy fever there has been a notable improvement in the condition. It seemed that agents, no matter what they were, which might provoke that sort of reaction, would in a sense break up or destroy the quiescence of the host to the invasion by the bacilli, because a chronic case of leprosy goes on for fifty or sixty years causing very little reaction, the host being quiescent. If anything can be done to break up the quiescence on the part of the host, the effect might be of great benefit to the individual.

A number of things we have tried at the Lepers' Home stirred up resistance on part of the individual, provoked a local reaction and produced systemic reactions with high fever. Among that list of remedial remedies we might include simple things like prolonged hot baths at a high temperature. Iodids internally administered almost unquestionably provoke a reaction.

Erysipelas has been a matter of common observation and almost always leaves the leper considerably better than he was before. I have had several cases that I thought proceeded to an apparent cure after vaccination with erysipelas vaccine. The erysipelas vaccine produces a local reaction and a high febrile reaction. The local reaction was followed by desquamation as profuse sometimes as the desquamation seen in scarlet fever, with the subsidence of the lesions, leaving pits where nodules had previously been. The method looked hopeful at times; I succeeded in one or two cases and failed in a considerable number of cases, and in the one or two cases in which I had succeeded they proceeded ultimately to relapse. These reports of cases treated with chaulmoogra oil esters makes the observation clear that most of the cases treated with the esters of chaulmoogra oil will react violently from time to time both locally and systemically. The observation is further made that after the local reaction there is considerable improvement progressing up to the point that Dr. Roussel has called apparently a cure.

Dr. J. N. Roussel, New Orleans (closing): As far as causing the lesions of Leprosy to disappear is concerned, I am sure it can be done in several ways. I have seen it done. I have done it myself time and again, but they do not stay "put," so to speak. They always return, and in much greater numbers. In the tubercular type, hypodermic injections of Bichloride of Mercury will do it. I tried the Bichloride at the suggestion of Croker, of London. Chlorate of Potash will do the same thing, and I have no doubt that there are other agents which will do it as well. These agents seem to loosen the organisms, and when the lesions recur, they are more numerous, and much more acute. Following the use of the Ethyl-Esters of chalmoogra oil, the reaction has been most severe, so much so in some cases that I consider it almost a crime to use them. That the anthrax vaccine causes the complete disappearance of all of the lesions in some cases of leprosy, I am quite sure. Whether it will do it in all of the cases remains to be seen.

Man is not susceptible to anthrax. The number of people who get anthrax is not large. Man contracts anthrax on the principle that a blind hog finds an acorn once in a while.

As to the diagnosis of leprosy. It has been known since the time of Moses, and possibly long before, though I believe the first reference to it is in the second book of Moses, and since then we have been making diagnoses on clinical manifestations alone. People have been sent to leprosariums on these diagnoses and very rarely have been mistaken, and this was long before the bacillus of leprosy was known.

If we have mistaken our cases for premycotic dermatitis, as some one suggests, and the anthrax vaccine has cured them, we have discovered something equally remarkable as the cure of leprosy, because up to this time we have not been over-successful in the treatment of this disease, either.

GALL BLADDER DISEASE AND ITS TREATMENT.*

By Dr. A. L. LEVIN, New Orleans.

Why discuss a subject which is so frequently handled and supposedly so well known to all engaged in the practice of medicine and surgery? A great deal of ink has been spilled on elucidation of the abnormal function of the bile container, the effect of it on the human organism and the proper correction of the defect, but in spite of that we have not succeeded as yet to put this subject in the first group of things of modern medicine. In medicine of to-day, as in the philosophy of individual life, the data of the whole field can be divided into four distinct and separate clases, namely:

(1) Things we know. (2) Things we assume to know. (3) Things we believe. (4) Things of which we are wholly ignorant.

The recognition and treatment of biliary affections in the last eight years has been greatly modified and put on a more rational and scientific basis. The great designer of the human body, in putting in a side track and a reservoir for the bile, has evidently favored the surgeon more than the internist. But the surgeon, as Rehfuss puts it, has failed to answer for us the following problem: "Does drainage with or without cholecystectomy result in cure of the infection?'' It is an everyday story in our clinical and private work, ''My appendix has been removed, I did not improve; my gall bladder was drained, I felt just the same; the gall bladder was then taken out and I feel just as bad as ever before.'' What can be the internist's answer to such unfortunates who appeal for medical aid? The surgeon certainly deserves credit for the many wonderful cures, but what about those uncured? How can we decide in cases of gall bladder disease which shall be given first the benefit of a medical treatment and how to do it? This is the subject I am presenting for your consideration and judgment.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1924.

I will not deal in this paper with malignancy, the most painful and unsolved chapter in medicine and surgery, the fourth class, things of which we are wholly ignorant. My intention is to deal with gall bladder disease of a curable nature.

It will be of material aid to familiarize ourselves with a few anatomical and physiological facts, in order to have a clearer understanding of the subject. The newer conceptions of biliary affections, according to Rehfuss, are based on a better understanding of the position of the biliary tract, the gall bladder included, between the liver on one side and the intestines on the other. We must go back to physiology to realize what is happening in these important stations of the human machine. Contents from the intestines always bearing more or less infection are hourly traveling to the liver, the refinery so to speak. Out of this impure and more or less infected product, a substance called bile is created and flows down another tract known as biliary back to the intestines. It is like the puzzle of Samson, a nest of stinging bees in the body of the dead lion producing honey, but it contains waxy impurities. Does the bile flow into the intestines constantly unimpeded? No, the designer of the human body put valves in the cystic duct and at the outlet of the common duct, which act as double guards. Judging from this anatomical arrangement of the bile tract nature's plan was to allow an intermittent flow of bile into the intestines. Why? Probably for the simple reason that it is easier for the acid chyme in the duodenum to destroy smaller groups of bacteria coming down with the bile intermittently than a large number continually. There are other wise arrangements of a protective nature to prevent the free entrance of infection from the intestines into the biliary tract, namely; the action of the sphincter of the diverticulum with a pressure within the common bile duct of 700 mm of water, according to Oggi, and the periodic free flow of bile keeping up a downward current, unless there is a stasis of bile and a mild reverse persistalsis exists. Physiology further teaches us that when food passes the pyloric gate and makes its appearance in the duodenum, the little bile gate in the diverticulum of Vater opens up, at the same time the gall bladder contracts and forces bile out through the cystic and common duct into the duodenum. When the latter is empty the bile gate at the outlet of the common duct closes and the liver bile, finding the outlet closed, is dammed up back into the gall bladder filling it up again.

Gall bladder disease is undoubtedly caused primarily by bacteria and is in my opinion a great and common factor in producing gastrointestinal disturbances. An attack of acute indigestion, without any definite cause, when the appendix can positively be ruled out, should put you on guard to suspect a beginning of gall bladder disturbances. To simplify matters, Cooke's definition is a logical one. He defines gall bladder disease as an inflammation of gall bladder with or without the presence of stones, in other words, he recognizes two distinct types—cholecystitis plus stones and cholecystitis minus stones. Osler's statement that in a majority of cases gall stones cause no symptoms and Hemmeter's contention that only 5% of all gall stone carriers ever have symptoms should not be taken for granted. Gall stones do not form in a perfectly normal gall bladder; whether we believe in the infectious theory of calculi formations, as Rosenow, or in the hypercholesterinemia, as adocated by Aschoff and Badmeister, structural changes in the gall bladder evidently take place which give rise to complaints of so-called indigestion, belching of gas, distress after meals, attacks of colicky pain, chilly feeling, a lump under the right costal arch, etc.

Routes Of Infection.—We are taught that the invading enemy comes either from within by direct ascension through the common bile-gates, through the circulatory avenues such as portal, systemic and lymphatic, or from without, the peritoneal side. Roesnow and others have demonstrated by laboratory experiments on dogs that streptococci from diseased foci under tension, for example diseased tonsils, abscess at the root of teeth, diseased sinuses, etc., find their way into the circulation and attack the wall of the gall bladder, causing cholecystitis with or without stones. Streptococci, isolated from cultures made from diseased gallbladders in which all surface bacteria had been destroyed, produced cholecystitis and in many cases gallstones. If these experiments could be applied to every diseased gallbladder, proving the existence of infection and bacteria in the gall bladder wall, it would stand to reason that the removal of the gall bladder is a far safer procedure than depending on short-time drainage of the structure to cure the disease. Shall we accept this as a sine qua non? No, there is another view to this picture. It has been demonstrated that stones containing 100% Cholesterol are very common and that these are practically always bacteriologically sterile and the gall bladder shows little or no pathologic-anatomic change. This fact led to the new conception introduced by Aschoff and Badmeister in 1909 that the abnormalities in Cholesterol metabolism play an important part in the formation of gallstones. (Normal cholesterol and blood varies from 120 to 180mm per 100cc. of blood, in bile from 0.4 to 0.7 per 100cc, of bile. Races with poor cholesterin are rich in stones, and physiological periods of increased cholesterin, such as pregnancy, are proofs to this theory; an excess of cholesterol in the blood may cause a precipitation of stones in the bile. Febrile conditions reduce cholesterol; diabetes, arterio-sclerosis, nephritis and inanition tend to increase it. Common duct obstruction by stones always causes an increase in cholesterol; gallstones in the bladder without obstruction may bring down the cholesterol to normal. The blood examination then is not of very great value, unless we have knowledge of the period when an increased cholecterol existed. According to this theory, it is immaterial whether the gall-bladder is drained or removed, trouble may arise afterwards, if the nature of the food tends to increase cholesterol.

These facts clear in our minds, we can realize the shortcomings of our old method of treatment. The old theory of purging is probably good in both varieties, infection and hypercholesterinemia, but it not sufficient, the alkine and antiseptic treatment may be helpful in one but not in the other; surgical successes and failures, in my mind, have a great deal to do with the type of case under treatment, as I believe both theories are correct. This is why the treatment of gall bladder diseases should, is and will undergo a radical change from systemic to local, from empirical to specific.

Diagnosis of Biliary Disease.—With the establishment in recent years of the new method of tapping the bile exit region in the duodenum, the internist and surgeon are armed with a new weapon to make a more accurate diagnosis of biliary disease. It is no longer a question for the radiologist to decide and seal the diagnosis; the bile can and should be studied, as the gastric contents namely: chemically, microscopically and bacteriologically. We determine chemically the bile salts, such as cholesterol, bile pigment, urobilin, urobilinogen, calcium contents and viscosity; microscopically, we notice the presence of pus, blood, mucus and laminated cholesterol plates; bacteriologically—the presence of bacteria. The microscopical appearance of bile is often a determining factor and the doctor even in the remotest country, being deprived of laboratory facilities, can judge very well by the appearance of the bile; if it is not as clear and transparent as fine Wesson oil, the chances are that it is pathological, especially if a suspicious history of biliary disturbances goes with it. In a paper of mine recently published in the *New Orleans Medical & Surgical Journal* (Jan. 1921, Vol. 73, No. 7,) I have described the method of obtaining bile and gave a brief resume of its birth. It is needless then for me to waste time in describing it again. A few points relating to that method is in order.

The use of a gastro-duodenal catheter of my own design as described by me in a recent publication of the *Journal A. M. A.* is of greater advantage; the patient's general condition should not be conducive to pylorospasm, it is often necessary to prepare the patient with a dose of Atropin gr. 1/120, as advocated by Einhorn, or a dose of bromides given early in the morning. Introduce the catheter just long enough to reach the average pylorus—say about 22 in. from the lips or a little longer when using the nasal route; immediately after the introduction of the tube, instruct the patient to walk for about five or ten minutes, then put patient on back and massage the region of the stomach driving the catheter into the pylorus; compress then the region of the gallbladder forcing the little sac to contract while patient is taking deep inspiration. The main points in my method is to drive the tube and not to depend on nature's generosity to send it in. Patients often lie for hours without any results waiting for nature's help; I repeat the statement that I made before that magnesium sulphate is not an essential factor in every case. If several efforts have proven futile, it is of significance to suspect a blocked common duct outlet by adhesion, inspissated mucus or stones. The quantity of bile obtained is sometimes very small in cases of contracted and small chronic gall bladders.

The numerous observations made by me and other workers in this field of endeavor, the diagnosis often confirmed by the surgeon, lead me to conclude that this method is of the greatest diagnostic importance to-day. I have also tried a method of oxygen insufflation with the tube in the duodenum in order to distend that region with gas, hoping to obtain a clearer view and a better outline of the channel radiologically. In doing this I have another point in view, after the bile and the inspissated mucus has been drained off, with oxygen in the duodenum giving us a darker shade on the plate, stones in the gall bladder will probably be more visible. In this work, I wish to express my gratitude to my confrere, Dr. A. Granger. We are not as yet prepared to make a report of the results obtained.

Treatment of Biliary Disease.—Whatever the origin of the disturbance might be, bacterial infection or an increase of cholesterol causing biliary stasis, common sense will teach us that by improving the drainage, we cause bacteria to be constantly washed out and cholesterol to be diminished. The treatment by this method can be divided into the following processes: (1) Simple drainage of the tract, (2) drainage plus local sterilization by various antiseptic solutions, such as argyrol, potas., permangan., silver nitrate, etc., (3) drainage, sterilization of duodenal tract plus transduodenal lavage. By the last named process, a double purpose is accomplished, namely: (a) the correction of a mild reverse peristalsis, (b) it minimizes considerably the infection in the portal circulation. Alvarez claims that the change in normal continuity and rhythm of bowel is the cause of aerophagia, heart-burn, globus and coated tongue. Rehfuss looks upon it as a very important modern principle in gastrointestinal pathology. (4) Continuous biliary drainage as long as 14 days, as described by Lyon. The bacteriologic phase of the treatment by obtaining the offending organism and making autogenous vaccines, so ardently advocated by Rehfuss and Lyon, is a beautiful scientific vision. It is hardly possible to believe that he can sterilize an ocean of infection and catch at the bottom of it the causative organism. I admit it is undoubtedly a very useful method to determine the presence of typhoid organisms in the bile and classify the patient as a typhoid carrier.

A number of very interesting cases, before and after operation, could be cited which were treated with very satisfactory results by the method of bile drainage, but for the sake of brevity, I will submit the following table of a group of 90 cases under my observation for a period of 18 months:

Total number of duodenal taps for entire group	520
Cases treated by the above method	50
For diagnostic purposes only	40
Of the number treated no recurrence so far	30
Recurrence	13
Operated on	4
Refused operation	3

Of the group for diagnostic purposes only, the diagnosis in quite a number were confirmed by operation. One out of the 90, was proven by operation to be empyema of the gall bladder and full of stones. The diagnosis of empyema was made from the pure pus obtained with the tube. Several of them received 23 drainages before the bile changed from a dark molasses color to a typical Wesson oil appearance. Cases which do not improve in spite of persistent treatment are surgical. This is a point of diagnostic importance. In the number of cases with recurrence who were operated, a coexisting chronic appendix was found. In one case operated three times with recurrence of pain, the surgeon overlooked an existing achylia gastrica with an excessive amount of mucus in the stomach, and when that was corrected the pain disappeared. In one case, a coexisting systemic lues was found to be an important factor in keeping up the disturbance.

For lack of space and time, I will report only one case which I believe will be of great interest to all of us. It almost resembles a case reported recently by Lyon of chronic arthritis with lambliasis, with marked improvement by the biliary drainage method. In my case, there is only a polyarticular arthritis, chronic, without intestinal parasites, the cause of the trouble seems to be undiscoverable, except that there is a very strong suspicion of an existing chronic cholecystitis, the drainage of which gave more relief than anything else used for a period of over two years The case in brief is as follows:

Mrs. A. M. A. age 48, white, female. In the summer of 1918, began to suffer with rheumatic pains in her feet and gradually developing also in her hands. In November 1918, she was admitted to the Touro Infirmary and kept in bed for 6 weeks; hot soda baths were used and oil every day; she complained of pains in chest, shortness of breath and rheumatic pains in arms and fingers. Also complained of some rectal trouble, dilatation was used for relief. Wassermann then was negative. Expert gynecologist eliminated any trouble in the pelvis as a primary focus of infection. In January 1919, all her teeth were extracted except 5 which were X-rayed 3 times and found negative. In March 1919, tonsillectomy was done, her hands at that time were very painful and swollen, no relief obtained.

In September 1919, autogenous vaccines were made from a blood culture and vaccine given every 4th or 5th day.

In November 1919, her hands and arms were badly swollen and feet very painful. She was put on thyroid extract. Wassermann again negative and several urinalyses negative. Gynecologist again reported negative. Her sinuses were then attacked with a view of finding the source of infection, without any results. They were found to be normal and to make sure, they were washed out and nothing was gained by it. About the same time she developed an abscess in the groin, which was treated properly and cleared up and since then, her left knee became swollen and stiff and contracted to an obtuse angle. She began to limp very badly and was compelled to stay in bed most of the time. The only relief she would get would be from a dose of calomel taken often. She became nauseated, started to vomit, could not retain any solid food. Milk and ice cream was all she could retain. Vertigo and dizziness would drive her back to bed every time she would make an attempt to walk. In June 1920, bile drainage was done in a sterile manner and an autogenous vaccine made again which was used for a period of 6 weeks, her condition became worse, she was too sick to sit up, she developed slight temperature and became very anemic. Xray of the gastrointestinal tract at that time was negative except for probable adhesions around the gall bladder area.

In August 1920, she went through a regular course of terrible treatment, as she describes it, in Hot Springs, with a slight relief for 2 weeks and following that short period of slight comfort, the condition became aggravated and assumed a more intense form than ever before. She returned to New Orleans and was under observation by one of our best orthopedic men, everything was tried, even intravenous injections without any results. She even tried yeast cakes every day, but nothing would move that hidden source of infection. She was again re-examined by a number of specialists and the focus of infection remained a mystery as ever before. Massage, violet rays, electricity and all sorts of suggestions were used in vain. She was referred to me with the idea of locating her focus of infection in the gall bladder and try biliary drainage. I undertook the task energetically and here I am presenting her before you after a 3 months treatment, wonderfully improved. She received altogether 23 irrigations, her bile was exactly the color of strap molasses when I started and by the time we finished, it was a pretty, clear, golden yellow color. Microscopically, the bile showed colon infection, which I did not pay much attention to. I used Jutte solution at first, argyrol, posassium permanganate and then switched to the solution recommended by Ousley in cases of arthritis. During the course of treatment, she called in an orthopedic man to straighten her knee by Buck's extension. At present, she can use her hands very well, her gastric disturbance has disappeared entirely, she can eat a good meal, she has gained considerably in weight, and she hardly experiences any soreness anywhere in the body.

Bearing in mind the points I have dwelt upon in this paper and basing my opinion on a study of the 90 cases mentioned above, I come to the following conclusions:

(1) The surgeon should not be hasty in his decision to operate in cases of biliary disease unless he is dealing with restless stones, adhesions around the neck of the gall bladder or chronic recurrent attacks where a hopeless pathologic gall bladder is suspected.

(2) Biliary drainage should be carried on until there is an appreciable change in the original color of the bile.

(3) If a chronic appendix is coexisting, do not waste time on medical drainage, the trouble will recur.

(4) If the surgeon will operate only when indicated, as stated above the removal of gall bladder will be the operation of choice.

(5) Medical drainage of the gall bladder gives the quickest relief next to an opiate during an acute attack.

(6) Medical drainage gives relief from pain in cases of recurrence, after surgical drainage or removal of the gall bladder. If it does not, suspect calculi in the hepatic or the common duct.

(7) Do not overlook an existing achylia gastrica with an abundance of mucus or the coexistence of systemic lues.

(8) For diagnostic purposes, medical biliary drainage should always precede surgical.

(9) A cholesterol free diet should be prescribed whether the case is being treated medically or surgically.

(10) Empyema of the gall bladder is a rare condition. If pus is found in abundance through the tube, you are justified to suspect it.

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DISCUSSION.

Dr. J. B. Elliott, New Orleans: I want to congratulate Dr. Levin on his excellent work. It is a pleasure to see so much enthusiasm displayed in regard to this subject.

I usually classify my cases as bacterial, or chemical. Those are the only two scientific methods I consider, namely, bacterial or chemical. I wish to take up, first of all, catarrhal jaundice. These cases can be helped enormously by the drainage tube. Ordinarily cases of catarrhal jaundice should be put on small doses of epsom salts and a properly regulated diet. Never give calomel. I have given acid oleate of soda and salicylic acid for years and have had good results.

The second class is the infectious type of gall-bladder disease. In these cases there is sometimes jaundice, but more often no jaundice. There is nausea and pain radiating down the back. The temperature may range from 99.5 to 100. The leukocyte count is not up necessarily over 10,000. The neutrophiles are not very much increased. In such cases I resort to medical treatment. I first try to drain. If I cannot drain first, I put them on a carbohydrate diet, then give them acid oleate of sodium and salicylic acid. That is best for the treatment of cases of the non-suppurative type. If a patient should have a second or third attack, I regard it as a surgical case. If patients have recurrent attacks with fever, leukocytosis, from my standpoint I refuse to handle them as they belong to the surgeon. Being a medical man I would want cholecystectomy done, although surgeons I believe like to do cholecystostomy as well. I have seen more than one case of myocarditis due to the leaving in of a chronic gall-bladder. I want my patient with chronic gall-bladder disease to have the gall-bladder taken out.

I have had four cases such as the doctor spoke of, that were operated on for gall-stones six months ago, and they have come back to my office with the same kind of agonizing pain. One patient who has a stone in the common duct needed operation. A second case was a man who was operated on last October and his gall-bladder drained. He returned to my office on account of pain. He had not been put on a careful diet. He is attacked with the same pain. He needs medical treatment for a while, and if he should not improve, I shall advise him to have his gall-bladder taken out.

A third patient I saw only seven days ago, the patient being a man who had duodenal lavage. He was relieved at once of his trouble around the gall-bladder He was attacked in fourteen days with exactly the same pain in the same place. That man should be drained again, and drained two or three times if necessary. If he keeps on having these attacks, look out for that man's myocardium. I am afraid of chronic poisoning from that case, and I should advise later on surgery. The majority of cases I see I certainly advise to be operated on by surgeons and have their gall-bladders taken out.

Dr. S. K. Simon, New Orleans: As soon as I read a paper on drainage of the gall-bladder by means of the duodenal tube by Lyon, in Atlantic City, I came back and put his methods into practice, and I have learned a great many things. I must confess that the pioneer work done in this field, led largely by Professor Max Einhorn, of New York, of introducing the duodenal tube and obtaining drippings of bile, the introduction of antiseptic solutions, such as argyrol, never impressed me, but Lyon's work was of such a high character and type, and his enthusiasm so unbounded, it certainly demanded a trial. I must say, I myself was skeptical as to the drainage of the gall-bladder by magnesium sulphate, but there is no longer any skepticism or doubt about it. The gall-bladder by means of magnesium sulphate can be made to empty itself of all accumulated bile, and not only that, but the entire gall tract is aspirated by means of the physiological action of magnesium sulphate in a thoroughly efficient manner. Any one who does this work in that manner, observing the effects of the magnesium sulphate, will not any longer doubt its efficiency.

In regard to getting the tube into the duodenum, it is a stumbling block. However, I am satisfied we are on the right track. The main point is having the patient swallow the tube after it reaches the stomach. You want to avoid the great curvature which the rapid introduction of the tube entails, and if it is introduced in this manner and by slow swallowing, it will take the lesser curvature route. After the tube is in the stomach and is resting against the lesser curvature, give the patient a glass or two of drinking water, and let him lie down or walk around. You follow the lesser curvature in this manner; the tube does not remain in the fundus of the stomach to be caught by the pylorus musculature, but it follows the line of the lesser curvature, and that is the route in introducing the duodenal tube, and the drinking of hot water facilitates carrying the tube along the lesser curvature and facilitates its ready passage into the duodenum. In some cases it is comparatively easy to introduce the tube into the duodenum, while other cases give more trouble. The mental element figures very largely. If you can get your patient's mind off of the introduction of the tube you can get in much quicker.

There is no controversy between medicine and surgery in this field. These cases are indicated for surgical drainage, but it does not cover the type of case in which the cholecystectomy is indicated. You cannot say this method will cure your case; you cannot see inside the gall-bladder any more than the surgeon can, and decide whether the gall-bladder should come out, or whether it is preferable to avoid the serious risk of removing the gall-bladder. All cases in which cholecystostomy is indicated can be very well approached by this method. Cases of gall-stones, cases of high infection of the biliary tract, especially of the gall-bladder itself, do not do well under this treatment. But nothing has been lost. No time has been wasted, and no danger has been incurred by resorting simply to drainage of the gall-bladder by the method we follow. The last case we had we subjected to at least ten drainage treatments used over a consecutive period of ten days, and repeated it again in two or three weeks, if indicated.

Dr. E. Denegre Martin, New Orleans: The subject has been so thoroughly discussed there is very little to say. In the beginning of this work I must confess I was skeptical. but I do know that there is more in this method of duodenal drainage by the tube than the majority of us are willing to admit. I believe the time is coming when we will be able to make a perfect diagnosis in a given case. I can imagine, for instance, if we have a perfectly patulous gall-bladder, and this procedure is correct, we ought to be able to tell by the quantity of bile that is being poured out at the time as to the normal action of that gall-bladder. I believe in all these cases of slight infection, where there is slight gastric or gall-bladder disturbance, we can by this procedure relieve them. As has been said, if we find after reasonable drainage they are not getting the necessary relief, then we can resort to surgery. I am inclined to believe that where we have a mild infection and a patulous duct, we can cure these cases.

There is a class of cases which are infected where we have the leathery type of gall-bladder which goes perfectly with a patulous duct, yet empties itself all the time. These cases will keep on with chronic symptoms, can be cured by operation only. We want to be able to make a differential diagnosis in these cases and say whether or not these are really the cases to be treated radically.

With regard to after-pains, many of the postoperative symptoms which patients complain of are not due to imperfect drainage of the gall-bladder, nor to recurrence of the disease, but are due rather to adhesions which form after operation. We have these adhesions around the appendix; we have them in abdominal wounds, and why not have them here? In drainage cases, since I have been dropping the gall bladder to its normal position and not attaching it to the abdominal wall, my patients have done much better and rarely complain of after-symptoms.

I have learned another valuable lesson from this method and it is one of the most important things to be able to do without causing the patient unusual disturbance, that is to wash out the stomach after operation, where it must be done. Where we have regurgitation of bile into the stomach; when the patient is distended and even nauseated. In such cases this small tube can be passed through the nose and the stomach washed with little discomfort.

By introducing it through the nose and do away with all disagreeable features. There will be no nausea and no vomiting. The patient can be relieved without any trouble, and it can be left in over night. I am telling you this after having used it many times in these cases. Only a day or two ago I introduced this tube into the nose of a patient who was completely relieved after a second lavage. Lavage will relieve every case of pylorospasm, and if a man cannot be operated he can at least be relieved. If postoperative cholangitis cannot be relieved by drainage, the gall-bladder should be removed.

Dr. Allan Eustis, New Orleans: I think, like all new things in medicine, we are apt to be overenthusiastic in the use of the duodenal tube and I would sound a note of caution against the indiscriminate use of duodenal lavage, for the simple reason pointed out by Dr. Elliott, namely, that failure to drain the injected gall-bladder, may result in serious consequences to the patient. I know of one case of death which was directly traceable to duodenal lavage. A patient with a definite, septic gall-bladder consented to operation. During the interim of business preparation he had heard about the wonderful cures with the duodenal tube, although he had made arrangements for a cholecystectomy. After two weeks lavage he had another attack, with a leukocyte count of 35,000 and died of septicemia. I would caution practitioners not to become overenthusiastic.

In the treatment of gall-bladder disease we as medical men should watch the work of different surgeons. The best results I have seen in these cases have been from men who have been conservative in their surgical technic. These men make it a habit in cases in which there is empyema of the gall-bladder of not attempting to remove the gall-bladder at the first sitting but simply drained it, thus allowing the infection to become less virulent, and going back at a later stage and removing the gall-bladder when the infection is not so virulent. The reason for that is, after removal of the gall-bladder there is a marked contraction of the ampulla of Vater, with stasis in the common duct. If that material is infected you will have a secondary pancreatitis, and by drainage of the gall-bladder for several weeks or months there is less chance of subsequent pancreatitis.

Dr. C. W. Duval, New Orleans: It is not clear how any one can enter the gall-bladder or biliary passages by the introduction of the duodenal tube. We all know that magnesium sulphate given to an individual will cause the emptying of the gall-bladder. We also know you may pass a tube down into the duodenum, and manipulate it all you please, and roll the patient over, and it will not have any effect on the gall-bladder. At least, it will not empty. You may drain out the gall-bladder with the tube if you will precede its introduction by magnesium sulphate, then you are simply draining the duodenum or taking some of the material that has come from the gall-bladder into the duodenum, but you will not accomplish this except through a tube below. The cystic duct here is supplied with valves, and they all point in the direction of the fundus.

I understood Dr. Levin and Dr. Martin to say that after introducing the tube you must consider the abdominal wall; that you can feel the gall-bladder and squeeze the bile out of it. You cannot do it to save your life, because these valve close tighter and tighter. You have got to open these valves through the stimulation of chyme which passes out of the stomach. Magnesium sulphate will do the same thing. To get these valves to open you must act upon the mucous membrane through the nerve by something like chyme or magnesium sulphate.

Dr. J. E. Knighton, Shreveport: I have had occasion during the past year to have considerable experience with biliary drainage with the duodenal tube. With reference to the kind of tube one uses and the difficulty of reaching the duodenum, I will say that it has not been a great problem with me. The fact is, with the tube that was first designed by Einhorn, I have been able to reach the duodenum within thirteen minutes. Unquestionably, when you are able to get bile drainage, or if you are not able to do so, the bile ducts can be drained by aspiration with a syringe. Have the patient drink water, and if you are not able to draw the water back immediately you know the tube is beyond the stomach. It is not a difficult problem so far as having the tube reach the duodenum is concerned.

The question in my mind is as to the value of this method before us. As Dr. Eustis pointed out, we must not permit ourselves to become overenthusiastic and attempt to treat every case of gall-bladder disease by means of this tube and drainage. There is no question in my mind but that there is a class of cases which under proper treatment can be taken care of by this means. There are other cases in which we should not attempt to continue the treatment by means of this tube. It is of value in diagnosis. It is of value in determining whether or not you really have a diseased condition of the biliary passages. It is of value in continuing at intervals drainage of the biliary passages after you have had surgical treatment for drainage of the gall-bladder. The trouble about a great many of these cases that are drained surgically is that the drainage is not continued long enough, and occasionally drainage by means of the tube afterward will be of great benefit to the patient. We frequently see patients who have had surgical drainage, and after a while they complain of the same symptoms, and drainage of this type relieves them, and it can be demeonstrated beyond all doubt that it causes drainage of the gall-bladder passages.

Dr. Daniel N. Silverman, New Orleans: It may be said that we occasionally meet with difficulties in the introduction of the tube into the duodenum and as long a period as twenty-four hours may elapse before intubation takes place.

The gall-bladder being relaxed and the ampulla closed in the fasting state in which we have our patient during this examination, it is generally believed that some substance such as magnesium sulphate must be introduced in order to dilate Oddi's muscle. Should drainage be obtained with the mere introduction of the tube, there is little doubt but that we are dealing with a disturbance in the nervous innervation or some pathological state such as adhesions causing a patient sphincter. Certainly, in order to facilitate drainage of bile, the salt should be added in all cases.

In the treatment of some of these cases of pyogenic infection of the gall-bladder, we should not depend upon the subsidence alone as a guide to improvement. Although the patient may feel much better after a few drainages, one will often find that the bile remains full of leucocytes. Many of this type are surgical and can be relieved of a deep seated focus of infection by this means.

Relative to hypercholesterolemia, a possible cause of stone formation, Rehfuss says that infection is considered by many to play the predominating role in this change. We always have infection and usually stasis before cholelithiasis whether there is a predisposing hypercholesterolemia or not.

Dr. J. A. Dana, New Orleans: I want to thank Dr. Elliott for his clear classification of the cases which are surgical and those which are medical, and the time when a medical case becomes a surgical one. I could not have stated the case more clearly than the doctor did. I agree with the medical men from a surgical standpoint that there can be no question about introducing the duodenal tube as indicated. Gastroenterologists have demonstrated it clearly.

I want to take exception to one remark made by Dr. Duval of not being able to squeeze the gall-bladder because there are valves in the cystic duct. There may be anatomically valves in the cystic duct, but we surgeons know that one of the common tests we make regarding the patulousness of the cystic duct is that when we open the abdomen and expose the gall-bladder, especially if it is tense and bulging, we are able to squeeze bile out, and unless there is a pathologic condition we can usually empty the gall-bladder without any trouble.

Dr. A. L. Levin, New Orleans (closing): I am not going to occupy much of your time with any closing remarks. I wish to thank the gentlemen for discussing my paper so thoroughly. I will repeat what I have previously said, that at the Congress of American Physicians held in Baltimore recently this was the most interesting subject discussed.

Dr. Duval should not mislead you because of his high standing as a pathologist. The practical application of this method of treatment does not harmonize with his theory. We see and make use of it every day, and if he wants to see how this is done I will have cases to demonstrate tomorrow at 8 o'clock in my office, at which time I shall be glad to show him how we can drain for hours and empty the bile from the common and hepatic ducts and probably also from the liver. The results speak for its usefulness.

With reference to the remarks of Dr. Simon, I do not agree with him, that the tube mysteriously follows the lesser curvature.

I suggested and designed a new tube, because I believe this tube will enter the duodenum quicker and drain better. There is no need for metal at the end of the tube.

As regards the remarks of Dr. Silverman concerning gall-bladder disease, if he will look up the subject in some of our recent works, he will find it plainly stated that hypercholesterinemia without infection does cause gall-stones, but the infection follows afterwards.

DRUG ADDICTION AND ITS RELATION TO PUBLIC HEALTH.*

By Dr. M. W. SWORDS, New Orleans.

I will not undertake a discussion of this subject as the time allotted me is not sufficient to give it the consideration that it deserves. Instead, will merely call to the attention of this Society the importance of this matter, in order that they may discuss it.

Drug addicition is a burning issue all over the civilized world and when an opinion is expressed thereon, it should be after careful study and deliberation. Many are the thousands whose happiness and liberation from slavery depend upon the future acts of the medical profession. Continuous use of opium, or its derivatives, for a sufficient length of time, (necessarily varying in different individuals), produces what is called the opium habit. Cocaine does not produce the same effect as opium or its derivatives. The use of cocaine is a vicious practice and must not be confounded with opium addiction. The so-called morphine habit, in my opinion, is not a habit at all, but a diseased condition definite as to symptomatology, physiology and pathology.

Medical opinion is about equally divided on the subject of drug addiction into two classes. One that addiction is a vice, pure and simple, and that the victims are vicious individuals. The other, that addiction when once thoroughly established is a disease, no matter how contracted—preferred or accidental.

I believe with those that contend that the continuous use of opium or its derivatives produces a diseased condition in the user with manifestations of symptoms that is always true in kind and character in every individual user, regardless of condition, race, sex, age, occupation, custom or habit.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

Withdrawal symptoms of morphinism is as distinct in characteristics as any disease that we know. Experimenation by Volante and others has demonstrated that animals when treated by continuous doses of morphine develop the identical phenomena as those found in the individual user of the drug. Volante was able to immunize dogs and other animals from toxic doses of morphine by injecting the serum of an addicted animal into the blood stream of a non-addicted animal. If the truth of this experiment is to be accepted, it absolutely lays at rest the importance placed upon the psychology of drug addiction.

The belief of the penalogical experts that addicts are mostly criminals, and that opium users are chiefly of this class, to my mind, is only the expression of an opinion that has no justification scientifically, and is not based on common reasoning. Addiction disease bears the same relation to public health as other diseases that are considered in their particular class. The treatment accorded the addict at present is inhumane, and the medical profession should take immediate steps to put an end to the fallacious opinions existing, as regards the drug addict's station in life.

Legal regulation of the addict that prevents his obtaining a drug that has become a physiological necessity except through illegitimate channels and from irresponsible sources causing untold misery, suffering and death, and is extended through these sufferers to thousands of innocent people dependent upon them for their daily succor, should be either repealed or modified in order that this deplorable condition would no longer be tolerated under the law.

Treatment, care and the final solution of this problem is a scientific one and should be far removed from legal regulation and penalogical methods; especially when the so-called penalogical expert and policeman are substituted for the physician; where prisons and the like institutions are made use of instead of institutions of science.

Drug addicts are not criminals and should not be classed as such. There are criminals that are addicts; so are there ministers, lawyers, doctors, and bankers. Therefore, addiction recognizes no social law.

This is a matter that we medical men must solve. It is time for the drug addict to be recognized as a sick individual;

it is time for the doctor of medicine to recognize him as a sick individual; it is time for the doctor of medicine to treat this sick individual by the same scientific methods employed in the treatment of other diseases. This is a condition that must be disposed of, and when it is, it will so be by medical men of the universe and not by penalogical experts and legal regulations.

DISCUSSION.

Dr. W. H. Seemann, New Orleans: I did not intend to discsus this paper, but inasmuch as it has been prepared so thoroughly by a man who has had so much experience in the treatment of drug addiction, it should not go without discussion.

I represented the Louisiana State Medical Society on a committee to study drug addiction. We gave a great deal of time and thought to the subject, but we did not arrive at exactly the same conclusions that Dr. Swords has arrived at, although our experience, our intimate contact with these individuals did not compare in any way to the vast experience Dr. Swords has had.

The general opinion among the men on the committee, many of whom had have considerable experience, was that in the majority of instances the drug addicts were vicious. They admitted that there were some few, or a small minority, but through force of circumstances, through disease, or for some other reason, they had become addicted to the use of morphine or of opium, or one of the other derivatives of opium, and they had become so accustomed to it they were actually in a diseased condition. When I say we differ with Dr. Swords, we differ from him only in some particulars, not entirely. I personally feel, after studying this condition, that I am less able now to express a positive opinion than I was early in my investigations. It seems to me, the further you go into the subject the more ramification you encounter and you find yourself in a sea of doubt, unable to express an opinion or to know in which direction to go. It is unfortunate that something could not have been done by the Federal Government when they enacted the narcotic law to take care of these addicts thrown upon the community. This matter is of considerable sociologic importance, and from the standpoint of criminology it offers probably one of the most vexed questions to solve that the penalogists have to deal with. I am sure we all know the enthusiasm with which Dr. Swords has gone into this work, and we feel his views are based on an honest opinion after a considerable experience, and no matter what our decision is, we must all recognize the fact that he has thrown every force of his enthusiasm and vigor in the attempt to solve what has been and what will always be a very vexed problem.

Dr. E. M. Connely, New Orleans: I would like to ask Dr. Swords if in his experience he has run into the criminal class, and that most of them come from the demi-monde, and if they are not, most of them, more or less subnormal intellectually. In other words, do they not come mostly from a class that the phychiatrists call constitutional psychopaths.

Dr. W. J. Otis, New Orleans: My experience with this class of patients is that the sooner we get them, the more isolation we give them, the quicker the withdrawal of the drug, and the more forced feeding, the better the results. In order to contribute to the recovery of these people, we must have isolation, and to do that we must have co-operation of the state and city officials. To do it thoroughly and properly we must have a psychopathic pavillion with experts in charge. Some of these people we know are quite intellectual under the stimulus of the drug, while others are not. The majority of cases I have had to contend with have been subnormal to a large extent, pathologically so. Even though they were keen and acute along certain lines, their intelligence level was below par in a large number of cases. The majority of these cases, as we all know, are antisocial. A number of them are moral imbeciles, psychopaths, and inadequate personalities

From my experience with these people in all walks of life, male and female, they are just as I have said in opening my discussion. The measures to be invoked for their treatment are isolation, proper scientific treatment, forced feeding. All with the hope of a recovery.

Dr. W. M. Swords, New Orleans (closing): Dr. Seemann made the statement that all members of the committee that was appointed do not agree thoroughly with all my views, and that is something that is common to the whole country at present. Doctors are arrayed against one another. They are about equally divided as expressed in my paper. We do not know where we are, but we do know that we are dealing with a matter that is of the utmost practical importance. In these United States there are two millions to four millions of these people that have no place to go, no place to be treated, no place to be comforted except in jail, and they do not want them there.

My fight for the addict has never been based on anything that is curative. I have had no experience with the cure of addicts. I have never treated an addict in my life, but I do believe that if you have these people to contend with, no matter whether they are psychopaths, whether they are below par or above normal, it makes no difference what their mental attitude or physical condition may be, they are still Christian human souls, and many thousands of them are not responsible for their condition. This is one of the instances where you should be your brother's keeper, no matter what condition in life a man or woman may be, whether from the demi-monde walks of life or not. Whenever a man or woman reaches a position in life that he falls by the wayside and continues to fall until he reaches the bottomless pits of hell, naturally we should strive to keep him from being pushed farther down in the mire of perdition, and it is in these cases that we should be our brother's keepers and extend a helping hand to the individual and try at least to give him some comfort and some relief other than serving thirty days in jail under very bad conditions. I do believe it is better to make social assets and possibly honest citizens out of individuals that are compelled to resort to theft and other crimes to obtain the drug that they will and must have. If you do not supply them with this drug legitimately, they will obtain it illegitimately.

I agree with any one that will do anything to help these individuals. Why are they addicts? The United States Government in its congressional record in the statistics tabulated from all parts of the United States gives two great causes of addiction, the environment of the tenderloin districts and association, and doctors of medicine. The government report says that. That being the case, if this is a vice, why should the government spend so much money to treat venereal diseases, which is a vice pure and simple, and yet close every avenue to these suffering unfortunates of humanity from obtaining something they must have and will get. That is the interest I have in drug addiction. I agree with anybody to do anything in the world for the addict and his family that will better his condition, but I agree with no one who says we should throw these irresponsible individuals out to prey on the public, or to be taken by a policeman and made a prisoner. The jail is no place for such a person. We should treat such a man as we should treat any other individual who is sick, it makes no difference what his station in life may be. That is my interest in drug addiction. It is more from a sociological than a medical point of view. As I have said, I have never treated one of these addicts and never expect to. Gentlemen, let us not throw the addict back into the scums of the city. Let us provide something for him so that he can be isolated and properly cared for. Let us do it quick, They have closed every avenue to these unfortunate beings and have done absolutely nothing for their welfare.

THE NEGLECTED TEETH OF CHILDREN.

By J. ROSS SNYDER, M. D., Birmingham, Alabama.

The attention of the profesison has been frequently and forcibly called to conditions of ill health resulting from diseased teeth and gums. At this time it may be stated that both the dental and the medical professions are keenly awake to the many possible dangers and injuries to health, resulting from this source. Indeed more conservative men assert that there now exists an unwholesome tendency to too quick conviction and sacrifice of teeth. The writer has little sympathy with this view. He believes that for every tooth which has been unnecessarily sacrificed there still remain a hundred teeth which ought to be pulled. It must be admitted, however, that the warnings and the admonishments of the conservative elements in the profession have given a helpful stimulation to prophylactic endeavors. There now exists in every city of size a number of dentists who are specializing and even limiting their work to prophylaxis. As people become more educated in the importance of dental hygiene and in the dangers of dental diseases, the number of these specialists will increase. The dental needs of our adult population are even now being looked after in a fairly satisfactory manner. The same cannot be claimed for our juvenile population. Ignorance, indifference and neglect continue to characterize our care of children's mouths. For a number of years such men and women as Fones, Thomas and Maud Tanner have been urging upon the professions consideration of the dental rights of children. In the communities in which they live, these men and women

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have done much to extend enlightenment on this matter to the general public. Their influence indeed has been national, so that now the programs of boards of health in a few progressive states such as Tennessee, North Carolina, Vermont, New York and probably one or two others, include a propaganda of dental hygiene for children. Notwithstanding these encouraging evidences of progress, the fact remains that, taking our great country as a whole, the children therein still suffer neglect of their dental rights at the hands of an indifferent people. The chief blame and responsibility for this neglect rest on the dental and the medical professions.

Wherever there has been made a systematic dental inspection of school children, startling and deplorable conditions have been revealed. In spite of the wide publicity which has been given to these findings, in spite of very brilliant results, which have followed every intelligent effort to combat these conditions, the great body of our professions continues in a disappointing attitude of *laisser faire.* The economic loss incurred by the state in educating children made backward by diseased teeth has been calculated in figures which ought to appeal strongly to statesmen. The number of children in this country with foul teeth and gums is legion. All such children are below standard and to this extent all of them are sick. Some of them are sicker than others. Malnutrition, indigestion, anemia, backwardness, pyelitis, nephritis, incorrigibility and insanity are a few of the many conditions which singly or in combination may have their sole origin in diseased teeth or gums. In an age when commercialism seems to be spreading in our professions, it is regrettable that the humiliation and the pain and the ache and the weariness and the expressed and the unexpressed suffering of little children with these conditions are incalculable—if they could be put in figures there might be a quicker arousing.

Before coming here the writer was advised to be careful not to make assertions hard to prove. When a thing is common knowledge it needs no further proof. There are children in remote rural districts of some states who are receiving more intelligent care than the children of Birmingham and of New Orleans. With but few exceptions the children, both of the rich and of the poor, of these cities are being denied proper dental care. Their teeth are allowed to come and to go with but scant if any attention, and this too while they are surrounded by dentists and physicians who are ranked high in professional attainments. To me it would seem a wise and a philanthropic move on the part of the United States Public Health Service to send Dental Hygiene Units, not into the recesses and the mountains of West Virginia but into our largest cities, that the professions might be educated. I feel no hesitancy, or delicacy for that matter, in asserting that any girl graduate after a year's course in the Bridgeport or the Boston or the Rochester Dental Hygiene School, could, on coming to Birmingham or New Orleans, teach many men in the dental and the medical professions much which they should know. I have no way of judging the knowledge of the men in these cities except by the way in which their work displays it. I have seen into the mouths of many children in this and in my own city; precious few of them exhibit anything to indicate that there exists here or there any very broad knowledge of dental hygiene.

This knowledge is accessible to all. Many of you no doubt have it, but of what worth is it if you don't show it? Some of you may even be proud of the good dental care which is given to children in your own clientele but whether you know them personally or not, each of you shares in the responsibility, for the general neglect of the hundreds and thousands of children here who because their teeth are only temporary, are allowed to ''shed'' them when and how they can. Each in measure is responsible for the health which too is ''shed'' during this a process of '''shedding'' teeth

The men who have no knowledge of the importance of dental hygiene are probably not in attendance at this meeting. They seldom go to meetings. They are hard to reach. I am getting at them in a new way which is related with the hope that you too will join me in a crusade against their ignorance. Whether it be from laziness or a too close application to the demands of a large practice, the dentist or the physician who fails to keep himself posted by study, by reading and by attending meetings and clinics, is incapable, if you will permit the vernacular, of delivering the goods. If he can't deliver what he professes to have, he is just as much a cheat, just as much a crook, just as dishonest as is the grocer who gives short weight. Any code of ethics which protects from exposure him, who is neither a good doctor nor a good citizen, is not ethics at all but insidious lying. Habit is a hard thing to break. I continue at times to lie for some of my medical confreres, just as I expect them to do for me on occasions, but I've sworn off so far as my dental friends are concerned.

There was a time when I was willing to argue in an effort to persuade dentists to be so kind as to give proper attention to my little patients. Time and time again do I refer children to their family dentists only to have the latter refuse to do the work which is needed—refuse on the old, old ground that the temporary teeth of children ought to be let alone. If I didn't know any more about pediatrics than some of these dentists know about teeth, I would go to the wilds of Africa—to tie umbilical cords of nigger babies for a profession. My lot was a hard one until the advent into my community of several dentists who agree that bad teeth are none the less bad because they are temporary and that bad temporary teeth often leave behind permanent injuries to the child's health. Just now, I am having a lot of fun at the expense of the dental Bourbons. I still refer my little patients to the family dentist, I am still willing to give him a chance. But if the parent returns to report an unwillingness on the family dentist's part to interfere with nature, I tell her something like this: "You have been unfortunate in selecting a dentist even rottener than your child's teeth, let me send you now to an up-to-date man." I have made a number of very enjoyable enemies and I recommend this system to any of you who wish for amusement which will do some good.

Before closing this brief but probably too frank paper, I wish too to ask your co-operation in an attempt to educate a body of men much closer to us than the dentists. I refer to the throat surgeons, than whom with their tonsilectomies there are none in our town exercising such a pleasing graft. My protest, however, is not directed so much against the ridiculously large fee which is being collected for a comparatively simple and easy operation but at something more serious. Many of these men in their desire to be known as strict specialists will see nothing in front nor behind the throat. They see nothing and they know nothing except tonsils, adenoids and fees.

Such have been allowed to run loose long enough. We ought to start in on them by teaching them that the child's teeth can harbor debris and pus to cause trouble just as much as is caused by diseased tonsils. The surgeon who removes tonsils from a child ever so completely and bloodlessly and yet leaves go unnoticed a decayed and foul tooth, ought to be known for just what he is—*a bum operator.*

DISCUSSION.

Dr. Haidee Guthrie, New Orleans: It is quite an honor to be able to stand before you and discuss some of the things mentioned by Dr. Snyder in his paper. I thoroughly agree with him that both dentists and physicians are exceedingly lax in the care of the child's mouth, not because we are ignorant of mouth conditions, but because the majority of operators are afraid of the child. A mother will bring her child to a dentist with the child's jaw very much swollen. She will walk up and down the office, and tell you how terribly nervous the child is. It is not usually the child who is nervous, it is the mother.

I have had over 4,000 cases of children under the ninth year in New Orleans, and the greatest amount of success we get with our children is in prevention. We should teach the young women in our high schools, the imperative necessity of the care of the teeth, so that when they become mothers they will know what to do for their children.

I find that 98 per cent. of the children have defective teeth; that 99 per cent. of them have no tooth brushes. In families of six or eight sometimes there is but one tooth brush for the mother, father and all the children, but thank God, for the one brush as it shows we are doing something in prophylaxis. One reason we do not see conditions in the mouth of the child is because all of us have had abscesses and no records of examinations that were made of these cases have been kept. I have not seen acute abscesses in the mouths of children. At the beginning of the third year there is absorption of the roots of the deciduous teeth, the pre-molars particularly. On account of the peridental membrane and the lack of elastic tissue proper, the pus immediately finds an exit. In the case of a chronic abscess there is no pain on percussion, so that when we see pus and sinuses in the mouth of the child the abscess is chronic, and nearly every one of the involved teeth have to be extracted.

One rule is, if you cannot fill the tooth of a child, that tooth must be extracted. I would like Dr. Snyder to come into my clinic. I feel sure that he will find cleaner mouths in some of my children than can be found among many people seen in private practice.

A few years ago I selected fifty children in the Day Nursery and with the co-operation of welfare workers, in examining the children's mouths every six or eight weeks apart for two years, that is, children between the ages of two and four years, I could not find a cavity. I did not select children with the most perfect dentures, but the first fifty that came in were selected. If we could do that for the children in our slums, we can do it for children in our private practice. You physicians see these cases oftener than we dentists do, and when the child has its first tooth, it should be brushed. We need the co-operation of the physician as the physician needs that of the dentist, and I am going to ask all of you when you see a tooth to please urge the mothers to use a tooth brush and put it on the tissues. The soft tissues need as much attention as the teeth of the child.

In our slum district we see ulcerative stomatitis. A good many of the men overseas called it "trench mouth" and treated it as such. In three hundred of these cases we have used dichloramin-T solution with gratifying results.

Dr. L. R. DeBuys, New Orleans: I want to repeat one of the statements that Dr. Guthrie made with regard to the attention given the first tooth. The question is frequently asked us, "Doctor, when should we begin this dental hygiene?" It should begin as soon as the first tooth erupts, and the first tooth should receive as much attention as the last tooth.

There is a close relationship between infected tonsils and infected teeth, and it can be readily understood and seen how a mouth bathed in pus from bad teeth can infect tonsils.

An interesting fact that came to my mind about two months ago was that there are dentists now specializing in the dentistry of children. There was one of these dentists here from Minneapolis whom I met and with whom I had the pleasure of exchanging views, whose dental work is entirely and exclusively limited to children.

Finally, I want to say that in those mouths where chronic dental defects exist we are apt to find elevated mouth temperatures, so that in recording temperatures of children with bad oral hygiene, these temperatures are frequently misleading. In these cases we should emphasize the necessity of the rectal temperature.

Dr. F. C. Ewing, Alexandria: I want to thank Dr. Snyder for his reference to the tonsil. For over twenty-five years I have been engaged in the specialty of the ear, nose and throat, and for the last two years I have practically been in the service of the United States Government at the Public Health Hospital in Alexandria.

Long ago I read John Noland Mackenzie's article on "The Slaughter of the Tonsils." I think it was away back in 1913. Mackenzie is Professor of Laryngology in Johns Hopkins University, and is one of the most brilliant and classical writers in America. He inveighed against and put his foot down in vigorous language on the so-called iniquitous tonsil. For intance, he says that the tonsils are much more often infected by the sinuses than the sinuses by the tonsils.

I simply quote him as authority who takes issue with the modern idea that all tonsils should be removed. I have argued with my friend Sluder of St. Louis on this subject, he is one of the ablest men in America who has done original work on the sinuses and spheno-maxillary departments of laryngology, and is a professor in Washington University in St. Louis. He believes that all tonsils should be removed. I believe a tonsil can be terrifically infectious, but we should exercise some conservatism about its removal. I have not gotten such brilliant results from taking out tonsils as a great many specialists claim. We have had as many as fourteen cases in a day since I have been at the Base Hospital, and now we have 550 patients, and we are taking out three or four tonsils a day, but the removal of these tonsils has not shown the brilliant results reported by so many practitioners.

As to the teeth, you may appeal to the decency of people, and as a matter of cosmetic decency they should clean their teeth twice a day. It is hygienic decency for you to tell your mother to clean her children's teeth.

I have not much faith in nor sympathy with ready-made specialism. A young man graduating from a medical college at once becomes a specialist. He ought to have a course of years in general medecine before taking up a specialty.

Dr. J. Ross Snyder, Birmingham:, Alabama (closing): As no one has disagreed with me sufficiently to get up an argument, I suppose I had better let well enough alone.

NERVE BLOCKING ANESTHESIA.*

By WM. JOHNSON, M. D., New Orleans.

Almost as old as medicine itself is the desire to render surgical operation painless through the medium of the local anesthetic. History reveals the fact that local means of producing analgesia dates back prior to the time of the employment of drugs for general anesthesia, yet the practical application of the general, precedes that of the local, by many years. The history of the efforts of those men who have given their lives in the furtherance of their desire to control pain, is one of the most interesting chapters in medical literature.

Cold applications and pressure were used to lessen pain when operating centuries ago. The Assyrians compressed the carotids of the neck. The local anesthetic effect produced by mandragora was recognized early by the Chinese. The Greeks made ointments and various concoctions from plants and employed them for their sedative and analgesic properties. We are told that following the death of Adonis, Aphrodite threw herself upon a bed of mandragora and lettuce, in order to relieve the feelings of grief. Indian hemp was used by the Egyptians, and it is stated that the plant mandragora was used twenty-five hundred years before Christ by the Egyptians, Hebrews, Hindus and Chinese. The application of cold was used as an anesthetic by Seberinus in the 16th century and revived again during the Napoleonic Wars. In 1850 Arnote and Hunter, following out this idea, applied freezing mixtures. Richardson invented the ether spray in 1886.

Morphine was the first drug to be injected in the region of the nerve trunks during the many experiments following the invention of the hypodermic syringe by Rendo and Wood in 1853. Finally, in 1884, Kaller introduced cocaine in operations on the eye, throat and larynx. This, with the isolation by Takamine in the year of 1901 of suprarenal extract which made the use of cocaine less toxic, marked the beginning of modern local anesthesia. Then finally, other preparations were developed, namely procaine, and the technic improved until it is now possible to block various nerve trunks located in almost any part of the body.

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The term anesthesia is applied to the loss of all sensation either local or general. Analgesia to freedom from pain, consciousness being retained. Nerve blocking is really a local analgesic and is particularly attractive to the head surgeon because of the accessibility of the nerve trunks, the possibility of the dry field, and the assistance of the conscious but comfortable patient.

The fundamental basis of the nerve blocking implies a thorough knowledge of nervous anatomy, of the surrounding anatomic structures, of the bones located in the region of the various nerve branches.

Procaine is the preparation par excellence, according to the latest reports of the National Committee on anesthetics, and the many surgeons who are doing nerve blocking. When large quantities of the analgesic agent is to be used as in the block method, the question of the vehicle is very important. Ringer's solution being isotonic with the blood is employed almost exclusivey.

Anatomy.—The nasal septum is a thin vertical wall which separates the nasal fossa from one another. It is formed in front, by the crest of the nasal bones and nasal spine of the frontal; in the middle by the perpendicular plate of the ethmoid; behind, by the vomer, rostrum and ethmoidal crest of the sphenoid; below, by the crests of the superior maxillary and palate bones. It presents, in front, a large, triangular notch, which receives the triangular cartilage of the nose; and behind the guttaral edge of the vomer.

The cartilage of the septum is somewhat quadrilateral in form thicker at its margin than at its center and completes the separation between the nasal fossa in front. Its anterior margin, thickest above is connected from above downward with the nasal bones the anterior margin of the (2) upper lateral cartilages, and the inner portion of the (2) lower cartilages. Its posterior margin is connected with the perpendicular lamella of the ethmoid, its inferior margin with the vomer and the palate processes of the superior maxillary bones. These various cartilages are connected to each other and to the bones by a tough fibrous membrane which allows the utmost facility of movement between them.

Block anesthesia for operations on the nasal septum (and turbinate bones, the nerve supply of which is chiefly the nasopalatine branch given off by the spheno palatine ganglion. These nerves, right and left, supply the central and lower and posterior portions of the septum, the Anterior being supplied by the medial branch of the nasociliary nerve which is derived from the Ophthalmic division of the fifth nerve.

The lateral nasal wall derives its nerve supply as follows: The upper posterior portion of the lateral nasal wall, from the posterior superior lateral nasal branches derived from the sphenopalatine ganglion; the lower posterior portion is supplied by the posterior inferior lateral nasal branch derived from the anterior palatine nerve; the anterior superior portion is supplied by the lateral nasal branch from the nasociliary nerve; the anterior inferior portion of the lateral wall, including the floor and anterior part of the inferior meatus are supplied by a nasal branch derived from the anterior superior dental.

The technic for blocking nerve supplying nasal septum.—The first injections made are the blocking of the right and left sphenopalatine (Meckel's) ganglion, which anesthetizes all branches supplying the nasal septum with the exception of the medial branch of the nasociliary.

Technic for Blocking the Sphenopalatine (Meckel's) Ganglion and its Branches.—The mucous membrane distal to the upper third molar, or in other words, distal to the tuberosity of the superior maxillary bone is carefully wiped with gauze so as to remove as nearly as possible oral secretions, and 3½% iodine is applied. A syringe carrying a Smith hub and needle is held in the hand pen fashion, the needle is inserted into the mucous membrane, advanced upward, inward and backward to an approximate depth of 2½ cm. for adults or 1½ cm. for children. 4 mils of a 1 per cent is injected; with children 2½ mils. When the solution is injected the point of the needle should be at the sphenopalatine ganglion which is located from 5 to 7 mm. beneath the 2nd division and midway between the posterior part of the tuberosity of the superior maxillary bone and the anterior surface of the greater wing of the sphenoid bone.

Blocking the Medial Branch of the Nasociliary.—The Medial Branch of the nasociliary nerve is blocked as follows: The nares are dilated by means of the nasal speculum. A needle of small calibre is inserted into the mucosa covering the nasal septum just posterior to the lower border of the nasal bone, and is advanced approximately 15 mm. in an upward and posterior direction. Two mils of a 1% procain suprarenin Ringer's solution is slowly and continuously injected from the time the needle enters the tissue until the proper depth has been reached.

The blocking of the right and left sphenopalatine ganglion and the right and left medial nasal nerves will produce a rapid and profound anesthesia for operations upon the nasal septum.

DISCUSSION.

Dr. M. P. Boebinger, New Orleans: The most interesting thing to me about nerve blocking, especially in blocking Meckel's ganglion, is to use a Smith needle, which is practically a right angle needle, held in pen fashion. If you will introduce your first and second fingers, or even a tongue depressor to the buccal mucous membrane, and allow the hub of the needle to rest on the last molar, that will bring you in the neighborhood of Meckel's ganglion. You will find Meckel's ganglion lies between four and seven milimeters below the second division of the fifth nerve. If one wants to go a little further, Smith has a needle that is a little longer with which you can block the second division of the fifth nerve with ease, and thereby control the frontal sinus, part of the lateral wall of the nasal chamber, and part of the septum, but Meckel's ganglion is the most important one for you to block. You can do a submucous resection almost completely by blocking Meckel's ganglion.

Dr. H. P. Jones, New Orleans: I have recently seen two effects that I attribute to nerve blocking which interested me very much, and made me wonder whether these experiences were common or whether they were unique. One was a case of blocking the inferior dental nerve for the extraction of teeth. This was done some eighteen months ago, the operation being followed by a loss of sensation of heat, partial loss of sensation in the tongue, a tingling of the upper lip, swelling of the tongue, and continuous discomfort, so far as this man was concerned. He comes to my office frequently, and I have not been able to help him very much.

The other case was one in which the inferior mental orifice was blocked and my patient had two large areas of herpes following. It struck me that perhaps nerve blocking is not always the innocent and safe procedure that we might hope it would be. I would like to have some information on the subject.

Dr. W. M. Johnson, New Orleans, (closing): The success of nerve blocking depends entirely on your knowledge of anatomy and your ability to carry out the technic. The vehicle is very important. The injection of an isotonic solution will not be followed by the usual tissue and nerve cell disturbance produced by the use of distilled water or normal saline solutions.

Perhaps the postoperative pain in the cases referred to by Dr. Jones was due to the use of distilled water as a vehicle. The failure of others should not discouarge one who is master of the technic, master of the anatomy of the operative field and has secured a proper vehicle.

RADIUM THERAPY.*

By ADOLPH HENRIQUES, M. D., Department of Medicine, Tulane University, New Orleans, La.

James Ewing, Professor of Medicine of Cornell University Medical College and one of the foremost pathologists of modern times, makes this statement:

"We must welcome the discovery of an agent which will affect cancer in a manner not open to argument. Radium can be relied upon to do the same thing under the same circumstances. Under many circumstances the result involves the disappearance of cancer tissue and the complete healing of the lesion. It is highly important, also, to recognize that the action of radium is specific, in the sense that it produces results that have not been duplicated by any other method, and produces histological changes in tumor tissue which one does not see under any other circumstances."

With a realization of the potency for good or evil of this valuable agent and with an appreciation of the innumerable difficulties to be encountered in treating such a dread disease as cancer, we submit this brief outline of a few of the many interesting cases that have come within the supervision of my associates (Drs. Menville, Magruder and Milholland) and myself within the past two years.

In this paper, the physicians with whom we handled the cases to be cited have most considerately privileged me to quote them and I hope that they are present to enter into a more detailed discussion of certain of its phases.

The first case was that of Mrs. D., referred by Dr. J. A. Estopinal, whom we now quote: "The lady consulted me because she could not breathe through her nose, could swallow liquids only and that with difficulty, had a cachetic look, slept only in 'cat naps', presented a mass in the epipharynx which made it airtight and which extended down to the lower border of the uvula. I could promise the patient nothing definite in the way of cure on account of the nature of the condition and in a few days cleared out the epipharynx. The pathologist reported fibro-sarcoma. The patient was better for a week to ten days.

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In the course of a month to six weeks the growth had recurred and was even larger than before. The result following the radium application was marvelous. Ten days later there was no trace of the growth. The cervical glands enlarged on both sides of the neck, an adenitis such as one finds in cancer cases and which were treated by the radium at the same time, were no longer enlarged a month later. This patient was seen a month ago. There was no trace of the growth both upon mirror and digital examination. This patient had been physically prostrated by the growth. All such cases were lost before the use of radium. I heard from her a few days ago and she seems to be perfectly well. We treated this case thirteen months ago.

Mr. D. treated in connection with Dr. O. Joachim first on June 3, 1920. To quote Dr. Joachim: "This patient had malignancy involving the right half of the larynx and later the inter-arytenoid space. He refused surgical interference. At present (April 13, 1921), there is no evidence of the tumor. The prognosis as far as the tumor is concerned is good; as far as the accompanying anemia, progressive."

Mrs. C. seen with Dr. Jos. Cirino on Dec. 3 1919. Dr. Cirino says: "This lady had a cancer of the breast. The mass was removed under local anesthesia followed by the application of radium. The pathologist (Dr. Couret) reported malignancy. There has been no recurrence."

Mrs. P. seen with Dr. Salerno who states: "This case of cancer of the breast is now clinically well. She was treated on April 29, 1920, with radium followed by resection, the diagnosis having been confirmed by Drs. Harris and Friedrichs."

Mrs. D. an old lady of 78, treated by my associate Dr. L. W. Magruder who states: "When seen she had a large mass in the right breast with two large nodules just above in the chest wall. The glands in the axilla were very much enlarged and tender. She suffered sharp shooting pains in the breast, did not sleep well, lost weight and her general health was poor. The case was inoperable on account of the age and the necessity of a radical operation. At present, April 5, 1921, the mass is about one fourth its original size, the nodules have disappeared, the glands in the axilla are no longer tender and are scarcely palpable. Her general condition is good, she sleeps and eats well and has no more pain." This patient was first treated by us on April 29, 1920.

Mr. T. referred by Dr. E. F. Salerno who states: "This man had extensive veneral warts which almost entirely covered the head of the penis. I cauterized them but they recurred more violently than before. After the application of the radium they disappeared entirely, there has been no recurrence and the skin is smooth excepting the scar from the cautery."

In cases of hyperplastic or glandular endometritis with uterine hemorrhage the results from the intrauterine application of radium are as a rule excellent. The technique however is so relatively simple as compared with other conditions that we will not tarry here. Dr. W. D. Phillips, Professor of Operative Gynecology of the Postgraduate School of Medicine, Tulane University, for whom we have had the privilege of making radium applications in a number of these cases says: "Clinically we get better results in hyperplastic endometritis than in other types of cases and this from the moderate and if necessary repeated doses, especially in young individuals. In these cases I would stress the importance of preliminary curettage both for diagnosis and for treatment."

Before proceeding, however, it might be well to cite a case seen with Dr. Jos. Cirino:

Mrs. K. had continuous hemorrhage with a soft, very much enlarged uterus which contracted under radium treatment. She was seen recently and is practically well and has had no hemorrhage since.

In the treatment of uterine cancer, radium has a valuable place. With a few exceptions, we can hope for at least palliation even in the inoperable cases.

Some of the inoperable cases may have a clinical cure established. Forsell of Stockholm reports 28% of inoperable cancers of the cervix treated by radium well after a period of five years.

Dr. R. B. Harrison with whom we treated Mrs. E. says: "This lady had a great big cauliflower mass about the cervix, decidedly inoperable, the hemorrhage almost continuous and with marked loss of weight and cachexia. At present she is clinically well, her general condition markedly improved. She feels well and has put on 25 pounds. (Patient had passed period of menopause)." Patient first seen January 8, 1920.

Dr. Maurice Gelpi, former House Surgeon of Charity Hospital, says of Mrs. V: "Patient was seen May 20, 1920. On May 22 a large mass involving the whole cervix and impinging on the vaginal vault was cauterized and radium applied. The case was inoperable, belonging to class 4 type. Inside of six weeks she showed remarkable improvement locally and generally and has continued to improve. She is strong, feels well, there is no discharge, no hemorrhage and she is preparing to take a trip to Europe.." Dr. Gelpi says: "This case belongs to the class of cases in whom the cautery was generally used and the patients were sent home to take morphine."

In conclusion, I would like to report two cases of myelogenous leukemia in which the results so far obtained have been striking as both patients have shown a marked improvement in the reduction of the size of the spleen, in the blood picture and in their general condition. The blood examinations in these cases were made by my friends Drs. Harris and Friedrichs and are of great importance in that they are not only of diagnostic value but also serve as an index to degree of pathology present and also aid in determining the application of the radium.

Case 1, referred by Drs. Phillips and Harrison. The general condition before treatment was poor, the spleen occupied the entire upper left quadrant of the abdomen. On Nov. 4, 1920, the leucocytes numbered 880,000, myelocytes 30%. In this case all the long bones were treated by X-Rays for ten days, the leucocytic count dropping to 811,000, myelocytes to 13%. On December 14, radium was applied to the spleen and the leucocytic count dropped rapidly to 496,000 on December 28, and on January 7, 1921, to 22,000, myelocytes 8%. At present his leucocytes have risen to 80,000, the spleen is palpable with difficulty, he looks well, has gained 24 pounds in weight (within one pound of his best weight reached seven years ago.) He feels well, works every day as a flagman on a passenger train and does not tire easily. He complains only of lack of appetite.

Case 2, is extremely interesting on account of the enormous size of the spleen when treatment was begun. The spleen extended in all directions, bulging the abdominal wall anteriorly, to the left and extending to within 2 inches of the symphysis and to within a half inch lateral abdominal wall.

The case was first diagnosed August 7, 1920. The blood at that time showed Red Blood Corpuscles, 3,760,000; Hemoglobin, 54%; Leucocytes, 328,000; Myelocytes, 36.5%.

In spite of the most excellent and intelligent medical care the anemia and weakness gradually increased and on February 2, 1921, when radium treatment was instituted his red cells showed 2,165,000 and his leucocyte count 308,000. Radium was applied to the spleen alone. We have made three series of applications in all. Today, the spleen is well within the left upper quadrant and is still growing smaller. His general condition is good, he works every day and says he never felt better in his life. His blood picture now shows: Red Blood corpuscles, 4,560,000; Hemoglobin, 85%; Leucocytes, 59,200; Myelocytes, 6.5%.

The most important feature of this case to me is that in spite of the fact that we treated only the spleen with radium that there is a marked improvement in the hemoglobin and red blood cells, coincident with the marked diminution in the leucocytes and in the size of the spleen, at the same time the general condition has markedly improved.

As a parting word, we realize the fact that we have had to feel our way very slowly and conservatively in our radium treatments as we have had so few sign-posts to guide us and have had to establish practically our town technique.

We believe that we have been particularly fortunate in producing relatively few burns although we have made nearly one thousand applications of radium within the past two years. This has been due to the fact that we have made use of the gamma radiations wherever possible and we have ever borne in mind the physics of radium therapy so closely allied in many ways to the action of X-rays which the author has handled for the past fifteen years.

I wish here to publicly thank my associates Drs. Menville, Milholland and Magruder for their valuable aid and co-operation and Dr. Magruder for his numerous practical suggestions in this pioneer work in a new field of medicine.

A close observation of the literature indicates that myelogenous leukemia treated by radium may undergo a clinical cure and remain well for a period of 6 to 8 years. Among the most recent articles is that of Regaud and Napier of France.

DISCUSSION.

Dr. Allan Eustis, New Orleans: In the second case reported by Dr. Henriques there has been really a remarkable improvement and I am in a position to compare the results of radium treatment with those we obtain with the X-Ray.

The man first came under my observation in October, 1920, when he had a white cell count of 800,000 and some odd, and a red cell count of 2,500,000. Under X-Ray treatment and with hematonics his red cells went up to 4,000,000 and some odd. His spleen was not palpably influenced. His white cells went down from 800,000 to 200,000. They were 300,000 at various times. His myelocytes under the use of the x-ray went from 15 per cent. to 8 per cent. However, he improved only slightly. There was a transient albuminuria and a decided myocardial degeneration, with dyspnea on slight exertion. We kept up the x-ray treatment from October until February. The patient asked me about taking radium. I had no experience with it, and I told him he would have to take it on his own responsibility, as I undersood there was a certain amount of danger in connection with the leukocytes after apparent cure. We finally put him under the radium, and the last time I saw him was about April 1, when his spleen was half as large in the position that has been shown in the diagnosis by Dr. Henriques. During the whole time he was taking x-ray treatment I could palpate the lower border of the spleen just above the symphysis. It was an enormous spleen pushing against the pubes. Symptomatically, he has certainly improved not only physically but his blood pressure from being 100 is now 128. He has less dyspnea, but of course, he is not cured. I think the last cell count I made in April showed 80.000. There was marked improvement. We must not lose sight of certain points in this case, that is, possibly in our interest in regard to the spleen we may neglect the fact that the primary lesion is in the bone marrow, and I would like to ask Dr. Henriques whether it is not a good plan to x-ray the bone marrow along with the radium treatment of the spleen.

Dr. Wm. D. Phillips, New Orleans: I have been particularly interested in Dr. Henriques' paper from the standpoint of gynecology, and have been most interested in the type of cases referred to as hyperplastic or glandular endometritis. That is the type of case we all remember coming to us suffering from profuse menstrual bleeding or irregular bleeding associated sometimes with leukorrhea. In this type of case, the hemoglobin per cent is usually low. We give various drugs to control the bleeding with no results. Frequently we have resorted to curettage, and the relief from it has only been temporary. Finally, as a last resort before radium was used, we invariably did a hysterectomy. The results from this operation were not very good because the patient was in bad shape and was subjected to the danger of an operation which she should not have been subjected to. With radium we have a valuable aid which removes the indications for hysterectomy in that type of cases.

There are two points I wish to stress. If this treatment is instituted in a young woman we will have to worry about the possibility of producing the menopause. In that type of case it is usually best to defer radium treatment as long as we can. However, when necessary with frequently repeated doses of radium we avoid that danger to a certain extent. When radium was first started in this type of case, it was given in one large dose. With the method of using it in frequently repeated doses we avoid that danger. Sometimes we have to use two or three applications before we can get the relief we want.

I also wish to urge one other important thing, and that is the question of preliminary curettage. I have seen some of these cases treated by simply applying radium without subjecting the patient to preliminary curettage. In the first place the curettage does good by removing a large amount of glandular material and in this way gives them some relief. In the second place without preliminary curettage we are liable to overlook a malignant condition. These cases should always be subjected to preliminary curettage and the scrapings carefully examined and then the radium applied.

In regard to the question of malignancy, I am glad to see that most men who are using radium are now advocating the use of radium in the early cases of cancer. It was the custom sometime ago to only use it in the advanced cases. Dr. Will Mayo recently in an article in Surgery, Gynecology & Obstetrics has stated that radium helps considerably as a preoperative treatment by devitalizing the cancer cells and rendering them less liable to grafting at time of subsequent operation, and for that reason he advises the preliminary application of radium a few days before operation is done.

Dr. S. M. D. Clark, New Orleans: I was much interested in hearing the story about a friend of mine who was a skeptic about radium, and by the way, at the present time he owns 150 milligrams of radium. The case that converted him to the use of radium was that prior to his leaving for the Army a patient came to him, he examined her, and stated that she had an advanced inoperable carcinoma and that surgically her case was hopeless. Radium was her only hope. In the meantime he left for the Army. The woman took three applications of radium and then began to improve so much that she began to doubt the word of the first observer. She consulted two other men some months after she had taken the three applications of radium, none of whom could find any pathology. When the first man returned from the Army the woman returned to him and said: "I am going to institute suit against you, you told me I had cancer and it is not so. I have been to two other doctors since I have seen you, and they have found nothing there." The first Doctor said: "Madam I thought I was right, let me examine you now. He found her completely relieved of all vestiges of cancer. This impressed him so deeply that he went out and bought some radium."

Returning to the points made in the paper, I will say that I reported two years ago fifty cases of hemorrhage from the uterus other than from malignant diseases, at the Atlantic City Meeting of the American Medical Association and in this field it has no equal.

As to the cause that Dr. Phillips referred to as hypertrophic endometritis, that is not the true pathology. They bleed and it is either hysterectomy or the use of radium. It is more of a chronic metritis, and the endometritis is only a small part of the general picture. In these cases radium is a specific and especially is its use desirable where we have defective organs, such as cardio-renal conditions, or some pulmonary condition where surgery is contra-indicated. But where surgery is not contra-indicated radium is far superior to surgery. Occasionally patients live quite a long distance and do not want to run back and forth and in these cases one can do a vaginal hysterectomy.

Radium has a definite field in cases of carcinoma of the uterus, not only in the advanced hopeless cases, but in those that are borderline in which heretofore we would have used the cautery, ligate the internal iliacs and leave the artery of the round ligament to supply the blood. Now radium has displaced the cautery absolutely. It is much simpler in its application, less discomforting, and I believe more efficacious. My experience with radium as a permanent cure in these cases has been this: I have had some women remain well, but in the majority of them radium gave the most spectacular and magical relief the first eight or twelve months, and one thinks that all is well. However, after this time they begin to have pain and you will find that metastases have taken place, and instead of getting a brilliant result the woman is bacck in the state that she was before, only having gotten temporary relief.

My position is this after using radium, if we can get these patients before the state of fibrosis sets in, that is before the eighth week, when the patient is transformed constitutionally and locally, we can remove the organ surgically and subsequently use radium.

This is a most important position for radium in the treatment of carcinoma of the uterus if you operate before the fibrosis stage sets in. If you wait until it is too late, you cannot remove the uterus. If you wait the proper time you have devitalized cells still having sufficient lines of cleavage to permit the radical removal.

Dr. S. K. Simon, New Orleans: I want to add two cases of rectal carcinoma I saw during the last year to Dr. Henriques' interesting series of apparent radium cures. In one of those cases I was able to follow the results of the radium treatment, and to any one who is inclined to be doubtful as to the effect of radium on malignant tissue, I will say that this particular patient came from the country and Dr. Matas and myself were very much opposed to performing colostomy, so high up was the seat of intestinal obstruction. There were no free movements of the bowels for two weeks prior to her visit to the city. There was almost complete intestinal obstruction. Within two weeks after the application of radium the intestinal lumen seemed to open up, as it were, sufficiently to allow the passage of soft stools. Prior to the application of radium the proctoscope showed a large cauliflower ulcerated growth, but at the end of three months this ulcerated mass appeared almost insignificant, so much so that the index finger was passed through the lumen of the mass without any difficulty. Subsequently this woman had radium applications every six weeks, and the carcinoma was apparently cured. I say apparently because I do not think we should say cured in the full sense of the word until a certain time has been reached. Since we have in carcinoma of the lower rectum a certain means of relief at the present time in radium, and it is such an easy method, it behooves us to keep in mind this only possibility in the treatment of carcinoma of the rectum. A diseased condition of the rectum is not infrequently overlooked, falling under the guise of hemorrhoids or dysentery or catarrhal enteritis. Some much simple explanation is given because the attending physician often fails to introduce his finger within the rectum and diagnose the case by means of palpation. If this was done more often in conditions of the lower rectum at an early period, we have within our reach a certain method of cure by the use of radium.

THE FUNDAMENTAL PROPERTIES AND THERAPEUTIC USES OF RADIUM.*

By CHAS. HENRY VOSS, A. B., M. D., New Orleans.

Daily the physician is confronted with various questions concerning radium. What is it? How does it act? Will it cure Cancer? How do you use it? etc. Articles on radium are being published monthly in the leading magazines and journals that enter the average home, as well as in the leading surgical and medical journals. Only a short time ago a patient on whom radium had been applied for pruritis vulvae became alarmed when a friend told her that she had cancer or the doctor would not have applied radium. She decided to return to the city at once, when in her monthly journal she noticed an article stating that radium is being used for other maladies in addition to cancer, and with success. This served to relieve her anxiety.

The day is passing when radium and cancer or inoperable cancer are being used as synonymous terms. As we are coming to a better understanding of the action of radium on both normal and pathological tissues its scope of usefulness in non-malignant cases is rapidly increasing. The present finds radium the agent of choice in many conditions that came under the domain of surgery but a few years ago. In hemangioma and tubercular adenitis for instance, radium gives very satisfactory results and without leaving unsightly scars to mar the patient for life.

Let us review what is known of the properties of radium and radio-activity. How does radio-activity produce tissue changes for better or for worse? Radio-activity is the spontaneous decomposition of the heavy atoms of an element with the emission of small parts of them, Rays, and the production of new forms of matter. It is this energy in the form of Rays that we make use of to destroy certain pathological tissues, and in other instances to stimulate normal tissue production.

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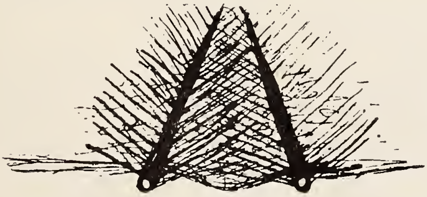
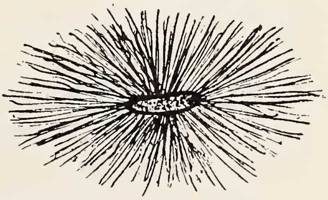
The preparations of radio-active substances in common use today are radium bromide, radium barium sulphate, and radium emanation. Radium salts and radium emanation, a gas constantly being formed by the transmitting radio atom, emit three kinds of rays; Alpha, Beta, and Gamma rays.

The Alpha ray is a Helium nucleus or a positively charged particle of the element Helium shot out from the radio atom at a velocity of from 9000 to 15,000 miles per second. These tiny particles are very readily absorbed having a range in air of but a few centimeters, 2 to 8, and .01 milimeters of aluminum serves to completely absorb all Alpha rays, therefore these rays are too readily absorbed to be of any service in the application of radium.

The Beta ray is a negative electron shot out from the radio atom at a velocity approaching that of light, 186,000 miles per second. These rays are half absorbed in one millimeter of soft tissue and the next millimeter absorbs one-half of the remainder etc. Therefore the therapeutic uses of the primary Beta rays are limited to the treatment of skin lesions not exceeding several millimeters in thickness; for example, Hemangioma Rodent Ulcer, Moles, Benign Papilloma etc. When Beta rays are being used the Gamma ray effect is negligible.



Divergence of Rays



Cross fire using needles.

Gamma rays unlike the Alpha and Beta rays are ether disturbances of high frequency, similar to X-Rays, set up by high frequency vibrations of electrons in the transmuting radio atom. They are caused by the rapid passage of escaping Alpha and Beta rays from the radio nucleus. Gamma rays are one-half absorbed in the first eight inches of soft tissue. The Gamma rays are only effective for a depth of about one inch, due to the rapid falling off in intensity by reason of the divergence of the rays. By using the cross-fire method, however, we are able to get a much greater intensity of the rays at a given point. For example, needles buried in a tumor mass are two to four times more effective than the same amount of radium applied over the surface of the tumor mass. Again in Carcinoma of the Pharynx heavily screened radium may be applied externally while radium needles are buried in the mass internally.

When Gamma rays are employed the radium must be left in place for a much longer period of time since the deep penetrating Gamma rays represent only about 5% of the total radio activity. When using Gamma rays it becomes necessary then that we screen off the Beta rays as they would produce a destructive reaction in the immediate vicinity of the radium in this length of time.

In dealing with radium rays it must be borne in mind that their intensity decreases as the square of the distance, for example one millimeter from a diseased area gives a certain dose, then 10 millimeters from the tissue gives one one-hundredth of the same dose instead of one-tenth. The distance of the radium from the lesion is highly important then in guaging dosage.

Having learned something of the nature and penetrating power of the primary rays of radium, the next question is, what changes do they produce in the living tissues and how? The action of Beta and Gamma rays are similar since the Gamma rays act by setting up secondary Beta rays in the nuclei of the living tissue cells as they pass through them.

Radium rays have a specific action on the chromatin substance of the nuclei, more especially the dividing nuclei. Chemical processes are set up by the rays and the end result of these processes is determined by the amount of ray dosage given to start them. Very small doses may stimulate cell growth and more especially cell function while larger doses will sicken the cell which may later recover to grow vigorously, or it will gradually undergo liquefaction necrosis and be absorbed. If the dose be sufficiently large, however, the cells are actually destroyed in the immediate vicinity while those nearby are sickened and later die.

Two striking changes are noticed following the application of radium. The decrease of parenchymatous cells with a corresponding increase in the connective tissue cells, therefore parenchymatous tissue cells are more susceptible to radium, and following their destruction they are replaced by connective tissue. This explains why the Gamma rays give such satisfactory results in lymphatic leukemia and enlarged Thymus.

Immediately following the application of radium there is a dilatation of the smaller blood vessels. This explains why the tissues bleed more freely for the first few days of the reaction, and why it is unwise to operate within ten days to two weeks thereafter. Also the lymphocytes are diminished in number thereby temporarily lowering the resistance of the tissues. Within two to four weeks the lymphocytes begin to return to their normal proportion and the lymphatics and smaller blood vessels begin to undergo a fibrosis. An overgrowth of connective tissue begins which in turn goes on to maturity contracting as in a visible scar, squeezing the fibrosed lymphatics and smaller blood vessels thereby decreasing the nutrition to the part and at the same time diminishing the possibility of metastasis.

The more nearly the cell approaches the embryonal type the less resistant to the radium rays. Since malignant growths are cells of the old parental type growing with no regard for law or order they come under the above law and are susceptible to the radium ray. A ray dose sufficient to destroy these rapidly growing cells will not of necessity destroy the normal tissue cells, and it is this fact we are striving to take advantage of in the application of radium.

After an application of radium a long enough interval is allowed to elapse for the normal tissue to recover its vitality then the ray dose is repeated and this is kept up until we feel that the destruction of all malignant cells has been accomplished. It is this time interval, and the size dose that can be delivered as the ''Knock Out'' dose, without the excessive destruction of the normal tissues that determines success or failure in the application of radium. The cry of the radiotherapist like that of the surgeon is *bring your case early* when the dosage sufficient to destroy the malignant cells will not of necessity have to be large enough to cause excessive normal tissue destruction.

The more specialized the tissue, the more resistant to radium rays. This fact explains why certain types of tumor respond so much more readily to radium rays than others. Contrast the uterine Leiomyoma which is very susceptible to radium to the Melenoma which is very resistant to radium.

The above explains why a keloid of short duration will readily respond to radium treatment, yet the same keloid left over a long period of time responds stubbornly, due to the fact that the young fibroblasts have had time to grow to maturity and become more specialized and therefore more resistant.

A malignant growth must be looked upon like an eating forest fire. It eats its way in every direction. Do not attack it at its center. Treat it like the forest fire. Even at the expense of normal tissue try to destroy the invading cells at the periphery. Cut off their nutrition and at the same time seal up the lymphatics by making a coffer dam around the growth. Use the Gamma rays over moderate periods of time and at frequent intervals giving the normal tissues time enough to recover some of their vitality between doses. This method is giving the best results.

The ray dosage required in the treatment of the various conditions for which radium is used today depends upon many factors. No simple rules can be laid down in this respect. So many Milligram hours is of no particular significance unless there is also taken into account the number of milligrams of radium element or Millicuries of radium emanation, the type of applicator, the distance between the radio- active substance and tissue, the screening used, the time intervals if any etc. All come in for their important part in the dosage of radio active substance. The effect of 1Mg. of radium element applied for 1,000 hours would not be the same as 100 Mg. applied for 10 hours. In the first case the dose would not be cumulative. It is of interest to note that any amount of radium element above 50 Mg. however, makes little difference in the end result other than the time factor, which will necessarily decrease as the amount of radium element increases. From the above we see that experience and careful study of each case is of highest importance in obtaining the best results.

The tendency today is toward larger doses. I have had Doctors tell me to give their patient the largest doses possible. "Knock him Out." Possibly this may be the fault of the radiotherapist, too small doses, however, I want to ask the question why are we conservative in dosage today. Some of the earlier workers with radium began by using enormous doses but with distastrous results. The pendulum began to swing back and perhaps went to the other extreme. Now I believe we are swinging to the "Happy medium." In giving large doses of radium rays it is very important that we feel our way for once the overdose of radium is given the Doctor is helpless. All he has at his disposal is opiates to relieve the pain and often morphine in extremely large doses fails to give relief. Too often we give one large dose for convenience sake rather than give it in broken doses which is the more logical procedure. Larger dosage given as a series dose, I believe is the best method to follow.

The proper application of radium is essential in avoiding unnecessary complications. Fatalities have resulted either directly or indirectly from faulty or carelessly applied radium that could have been avoided. Very often it is a difficult matter to get properly screened radium into the uterine cavity. For instance, the radium must be put well up into the uterine cavity and held there by a small cervical pack together with a Vaginal pack or there is a possibility of it falling out upon the posterior vaginal wall, thereby producing a severe burn or resulting in a recto-vaginal fistula. If necessary give the patient a short anaesthetic and put the radium where you want it and be *sure* it will *remain there.* If radium is to be applied into the lumen of the rectum it should be heavily screened, otherwise a stricture will result. In massive doses even this will not always prevent strictures, therefore when it is necessary to use massive doses do a colostomy and attack the Malignant growth from above as well as below.

Radium in malignancy means prolonging life and minimising suffering. If through faulty application or carelessness we fail in these, much of the criticism among some of the members of our ranks is justified. However. radium therapy has fully weathered the experimental stage. Many influential medical men look upon it with disfavor, but careful and conscientious work has amply demonstrated the increasing scope of its usefulness.

Let us continue to study the scientific application of this valuable therapeutic agent, confident that radium has done more to assist surgery and the X-Ray in combating malignancy than any other therapeutic agent known to the present time.

DISCUSSION.

Dr. John B. Elliott, New Orleans: I want to utter a word of warning regarding the use of radium. I have seen three cases in the last month in which radium was applied to women before the time of the menopause for menorrhagia. The use of radium stopped the function entirely. These patients have various phenomena and go through a life of several years of misery. I am opposed to the use of radium for menorrhagia in women before the age of 40 on account of the unfavorable results I have seen from its use. One patient has gone through five years of hades through suffering and nervousness, and the normal function was stopped by the use of radium. She has had five years of hell, which is the only word to use.

Dr. E. Denegre Martin, New Orleans: I was much surprised the other day when a lady informed me that she had found radium to be one of the best things to prevent pregnancy.

Dr. C. H. Voss, New Orleaens (closing): With reference to uterine hemorrhages one man said to me you are using too small doses in your cases of menorrhagia or metrorrhagia before the menopause. Some men use large doses; such as 75 or 100 milligrams for 12 to 18 hours, and repeat it every week for 2 or 3 applications. In using these large doses I believe the patient is being exposed unnecessarily, for in the great majority of cases this condition is relieved with much smaller doses.

In a report of 600 cases of menorrhagia by Leda J. Stacy, Rochester, Minn., August 1920, the average dosage used was 300 milligram hours (50mg for 6 hours) and the largest dose 600 milligram hours (50mg for 12 hours). No treatment repeated under three months. This may be ultra conservatism, but to relieve one condition without producing other disagreeable conditions is our aim. The man who uses large doses, I believe, already has or will have cases in which he will regret that smaller doses were not used.

ACUTE DIFFUSE GONORRHEAL PERITONITIS WITHOUT TUBAL RUPTURE.*

By MAURICE J. GELPI, M. D., New Orleans.

A review of my records of five hundred consecutive abdominal sections selected at random, reveals the fact that ninety-nine or practically twenty percent required immediate operation. Of these cases, where diffuse peritonitis was present, the cause of the peritonitis was in most instances, definitely determined. Among the causes assigned were: ruptured appendix or appendiceal abscess; ruptured gall-bladder; ruptured ulcer; ruptured pus tube; and perforated intestines. In all other cases, the origin of the peritonitis was not determined. It is with particular reference to this type of peritonitis in women that my case is reported.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

In making note of this case report please recall the generally accepted pathology of gonorrhea in the female. The primary infection usually takes place in Skene's glands, in the vulvo-vaginal glands, or in the cervix itself. Further infection takes place by direct continuity through the cervical canal, into the fundus and from there into the tubes. As the infection progresses still further in the lumen of the tube, the frimbriated extremity is sealed over promptly and is occluded. The beginning of a pus tube is thus formed. The peritonitis accompanying this process has always been conceded as being distinctly pelvic and localized more or less to the tube proper or to its immediate surroundings; unless rupture supervened.

Mrs. C. N. was admitted on January 11, 1921. Her chief complaint was acute abdominal pain.

She had been perfectly well up to January 10th. when at 7 P. M. after eating, she was taken with sudden severe abdominal cramps, at first localized in the right lower quadrant. Later the pain became general. At 10 P. M. she vomited copiously. She became constipated and had headache. The pain and vomiting continued up to the time of admission. She did not complain of her bladder nor of any other disturbances except as noted.

When first seen the patient had a temperature of about 100, pulse 120, respiration 26. She looked sick. The abdomen was uniformly rigid, moderately distended and very sensitive to touch. The external genitals were hot, somewhat red and the discharge attracted no particular attention. The blood count showed 36,500 W. B. C. and 95% neutrophiles. Vaginal examination was negative except for pain. Laparotomy revealed an acute diffuse suppurative pus. The gall-bladder was negative. The appendix inflamed but not ruptured and the tubes were found bathed in pus, but entirely free from adhesions, and the fimbriated extremities were demonstrated as being wide open.

At the time of operation, the origin of the peritonitis was admitted to be unknown and certainly not pelvic on account of the patulous tubes. The pus from the cavity was composed of one third lymphocytes and two thirds neutrophiles with many intra and extra cellular gram negative diplococci.

Dr. Daunoy of the Charity Hospital to whom I am indebted for these and other examinations in the case, reports that these diplococci were grown on suitable medium and that all cultures grown on ordinary medium were sterile. Subsequently, gonococci were demonstrated and grown for a second time from the abdominal pus, from Skene's glands, from the vagina and from the cervix.

The point that I want to make particularly, is that in women in the presence of an unaccountable peritonitis, even when the tubes are patulous and free, the proper procedure should be to make a smear of the abdominal pus so as to be properly guided in the selection of the medium for the culture. Such a routine will undoubtedly explain a definite number of cases of peritonitis of apparently idiopathic origin.

DISCUSSION.

Dr. E. A. Ficklen: Dr. Gelpi's case called to my recollection a similar case that occured in my practice a little over a year ago. The patient was 48 years of age so I had even less reason for suspecting the existence of gonorrhea than did Dr. Gelpi. It is to be noted that Dr. Gelpi's case of peritonitis was caused by the gonococcus in pure culture. It has been conclusively demonstrated by Norris and other close observers that cases of diffuse peritonitis are seldom caused by the gonococcus in pure culture.

The first detailed case report of this type of peritonitis was published by Dr. Harvey Cushing in the Johns Hopkins Bulletin in 1898. Although the gonococcus was discovered by Neisser in 1889 it was thought for years that its distribution was confined to the genito-urinary organs. Subsequently, when it was found in cases of Otitis Media, gonococcus pneumonia and gonococcus arthritis, it became evident that a wide distribution of this organism was possible under certain conditions.

Dr. Polak states that the gonococcus may cause endosalpingitis and later spread, by the lymphatics, to the peritoneum or pass directly from the fimbriated end of the tube. In Cushing's case the pressure on the tube forced out a drop of pus through the abdominal ostium. An interesting point in cases of gonorrheal peritonitis is that the patients are apparently not very sick. The peritonitis does not progress as rapidly nor follow so virulent a course as that produced by other pyogenic organisms.

The mortality in these cases is about 11%. Norris, in Gonorrhoea in Women, reports cases of gonorheal peritonitis in girls from 4 to 12 years of age following gonorrheal vulvo vaginitis. Gonorrheal peritonitis following rupture of a pus tube must not be confused with the type of case reported by Dr. Gelpi, and is of comparative frequency. Norris reports 97 cases. As far as I have been able to find there are only about thirty reported cases of diffuse peritonitis without rupture of the tube caused by the gonococcus in pure culture.

Dr. John F. Dicks, New Orleans: The subject of pelvic infection is one that interests me a great deal. I have never seen a case of true rupture of a pus tube itself. In considering the pathology of pelvic infections we must bear in mind the two distinct types or cases, the gonorrheal or intra tubal, the post portal or post abortal, which are extra tubal or essentially broad ligament infections. In the first type rupture of the tube is rare. In the broad ligament infections the Pyogenic organisms spread from the cervix through the lymphatics into the layers of the broad ligament and a distinct cellulitis or abscess formation takes place. If this collection is not drained we may have a rupture of the broad ligament due to increased tension.

I recall four distinct cases of diffuse peritonitis at Charity Hospital from rupture of the broad ligament, but cannot recall one case of diffuse peritonitis from true rupture of the tube itself.

Dr. J. A. Danna, New Orleans: I am very glad to have heard Dr. Gelpi's paper, as I believe he has brought out a very interesting point. The danger, however, of looking upon a peritonitis as something which may only be due to a condition in the pelvis, or to rupture of an appendix, must be clearly borne in mind. In other words, we should not be satisfied in opening the abdomen with member there are other things that may happen to produce a general diffuse peritonitis. Rupture of gastric and duodenal ulcer is of very common occurrence. A rupture of the gall-bladder is possible. A rupture of a typhoid ulcer in a patient that has walking typhoid is not at all uncommon. There are any number of pathologic lesions of the intestine high up which may by rupture give rise to general peritonitis. Therefore, I do not want the impression to prevail and I am sure Dr. Gelpi did not create that impression—that when you have examined the tubes and appendix, you are through looking for the cause of general peritonitis.

The essayist brought out a strong point when he said that every surgeon, who considers himself well equipped, ought to have available a pathologist that can make quick and immediate examinations in cases of this kind. If you open the abdomen, and think you have located the cause, get a smear of the pus, and you may find you have gonorrheal peritonitis. I dont think you ought to look for rupture of a gastric ulcer, or rupture of the gall-bladder, or anything else, especially if the local conditions in the pelvis show there is an infection already in the genito-urinary tract.

Dr. M. J. Gelpi, New Orleans, (closing): I was very much interested in hearing Dr. Ficklen say he has had such a case as we described, and I am glad he had something to say on the subject.

I have to disagree positively with Dr. Dick's attitude with reference to rupture of the tube. The pathology of abscess from gonorrheal infection and from streptococcus infection is so entirely clean cut that I can hardly conceive of a mistake being made in the gross. This patient had a history that was clean cut, and in the gross you have two distinct conditions. In one instance, as I pointed out in my paper, you have an infection coming from the outside progressing by direct continuity into the tube and there causing a chronically infected process affecting the whole tube, and more particularly the inside. Even when the abscess reaches an enormous size you can still see it is restricted to the tube.

In the case of infection of streptococcal origin, you have several possibilities there. You may have infection by direct continuity, although that is rare. You can have it from the blood vessels, or what is most common from the lymphatics of the cervix. You have first a lymphangitis, then a cellulitis, and if that process continues you have a definite parametritis, and the abscess definitely localizes in the broad ligament, and can be plainly seen from above. In some cases of drainage you get prompt and permanent relief. Those are the cases where the abscesses are localized in the broad ligament. You drain these abscesses and the patients get well. If you should operate subsequently for something else, you will find a remarkably good condition of the uterus and adnexa. These cases clear up remarkably well and you doubt your diagnosis sometimes. In the other instances where you drain such an abscess, where the condition is localized in the tube itself, the tendency is for recurrence to take place. In the gonorrheal pus tubes there is a tendency to recurrence of the abscess because you have a distinctly encapsulated and localized infection restricted, more or less entirely to the tube. Today when we open the abdomen seldom do we explore it without going over the contents thoroughly. In most instances one shows much better judgment to restrict the exploration to the infected field and deal with the condition one finds there.

I mentioned distinctly in my paper that the gall-bladder, duodenum and other structures were carefully considered before labeling the case peritonitis.

KIDNEY SURGERY UNDER LOCAL ANESTHESIA*

By CARROLL W. ALLEN, M. D., New Orleans.

My object in presenting this paper is to answer in detail inquiries which have been made regarding the scope and possibilities of local anesthesia in kidney surgery. I will consequently confine my discussion exclusively to the technical side.

The indications for local may be briefly stated to be any condition in which the hazard of a general anesthetic is to be avoided if possible.

The question of para-vertebral anesthesia in kidney surgery has often been discussed, but it is not at all popular among my confreres who frequently make use of local anethesia, and for my own part I much prefer the direct method of attack. Para-vertebral anesthesia is accomplished by reaching the anterior branch of the spinal nerves just in front of the transverse process of the vertebra, by passing a long needle down through the tissues of the back. To anesthetise the kidney area it is necessary to block from the ninth dorsal to the third or fourth lumbar inclusive.

As the skin and subcutaneous tissues through which the kidney incision must pass receive some nerve fibres from the dorsal branches of the spinal nerves this area must be infiltrated in addition, and this infiltration carries you down to the posterior surface of the lumbar fascia, immediately in front of which is the quadratus lumborum, which muscle is attached to the tranverse processes of the lumbar vertebrae and under surface of the last rib. You have consequently but to pass this fascia on the outer margin of the quadratus muscle and you are in front of the transverse processes along which it is easy to advance towards the vertebrae and reach the anterior branch of the spinal nerves by a more exact and simpler method.

Technic of Local Anesthesia in Kidney Operations.—The patient is laid on the table in the proper position but the table is not broken or the Lillianthal bridge raised until the kidney is ready to be exposed, as this position if maintained too long may be uncomfortable. A skin wheal is made about the center of the proposed incision, through which a long needle fitted on a large syringe is entered, this is passed upward slowly under the skin along the proposed line of incision, injecting as the needle is advanced to the interval between the eleventh and twelfth ribs. The needle is now partly withdrawn and directed downward along the proposed line of incision beneath the skin infiltrating the entire distance down to the crest of the illium.

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*Read before the Louisiana State Medical Society, meeting April 19 to 21, 1921.

The needle is now partly withdrawn and directed vertically downward from the skin surface to reach the lumbar fascia, which is recognized as the first plane of resistance in the deeper parts. The attempt should be made to reach this fascia just at the outer margin of the quadratus lumborum muscle. This is pierced by the needle at about three points an inch or more apart just on the outer border of the muscle and the tissues beneath the fascia infiltrated. Having completed the injections, the skin is now infiltrated intradermally with a small needle and syringe. This is purposely left to the last and this slight interval after the deep injections have been made allows the solution a slightly longer time to saturate the tissues.

This skin injection can be omitted if the subcutaneous injection has been made just beneath the skin but if this is done in stout subjects an additional injection should be made in the subcutaneous tissues at a slightly lower level. The incision is now made the entire length of the field and carried down to the lumbar fascia. The twelfth nerve is now injected high up, just under the twelfth rib. This nerve is a large trunk, larger than the other intercostals, about ⅛ of an inch in diameter, and runs obliquely downward across the field. At two inches from the spinous process of the vertebrae it lies about one inch below the rib, from this point it follows the outer edge of the quadratus lumborum lying in close contact to it beneath the lumbar fascia as far down as the crest of the ilium. It should be injected high up, proximal to the field. The long needle is now passed inward through the lumbar fascia and the cellular tissue and fat around the kidney lightly infiltrated.

All bleeding points are now ligated; the table broken or the bridge raised. This interval allowing time for the last made injections to diffuse.

The lumbar fascia is now divided close to the edge of the quadratus lumborum, the twelfth dorsal nerve is exposed and should be protected. The finger is slipped in over the surface of the quadratus muscle toward the vertebral column and the long needle passed in along side of it and the tissues just to the side of the bodies of the vertebrae and in front of the transverse processes are lightly infiltrated at three or four points up and down the spine. It is here that the rami communicantes which come forward from the spinal nerves join the sympathetic chain along side of the vertebrae. These nerves carry sensory fibres to the abdominal plexuses. The bodies of the vertebrae are easily palpated with the structures lying on it the aorta and vena cava.

We now open the cellular tissue and fat around the kidney and deliver it into the wound.

If the kidney is to be removed, bisected or the operation involve its hilum a light infiltration is necessary around the vessels, but this is not needed if the operation is limited to its cortex. This additional infiltration is necessary as all arteries carry sensory nerve fibres. On the renal arteries they come from the plexus on the aorta.

This completes the technic and when done in a methodical way is quite quickly executed.

You will notice in this description that the injections are made in several stages and after each stage there is a pause in which such necessary steps as applying ligatures is performed, or the kidney bridge raised, this interval allows time for the infiltrations to thoroughly diffuse without losing any time. Once the needle has entered the skin it is not removed until all the superficial injections have been completed, but is only partly withdrawn and redirected in different directions, this is done to reduce the trauma of repeated skin punctures.

By proceeding in this methodical way much time is saved. In one case of nephrectomy in which the patient's son, who was a physician, was present he informed me when through that we had taken forty-five minutes, probably ten minutes longer than would have been required for such a case under a general anesthetic.

The anesthetic solution is usually ½% of Novocain with 3 or 4 drops of Adrenalin to the ounce, from 6 to 8 ounces is usually necessary.

I prefer a 5 or 10 cc. syringe which should fit the needle with a slip joint, so as to be easily removed for refilling without disturbing the needle. The needle should be of fine calibre, about four inches long with a sharp bevelled point.

It is preferable that the patient have a light meal at the regular meal time preceding operation. About one hour before going to the operating room an opiate is given by needle usually 1/4 grain of morphine with 1/150 grain of scopolamine, in nervous individuals 1/3 grain of pantopon is substituted for the morphine, and in elderly patients the scopolamine is omitted.

It is decidedly objectionable to blindfold the patients or to plug the ears as is sometimes done. I always prefer to talk with them during operation, this helps to divert their mind and dispels any fear. Many are slightly nervous when they start but soon quiet down and gain confidence when they find they are not to be hurt.

The post operative condition is in marked contrast to similar cases operated under general anesthesia. There is practically no shock, often no nausea and the patient is at once able to take draughts of water and pain is usually not felt in the wound for two or three hours following.

The survival or failure of any methods advocated for practical daily use must rest entirely with the clinical results obtained and those methods which attain these ends with the least disturbance to the patient and the least suffering must ultimately prevail over all other harsher and less agreeable methods.

While I frequently use this method in operating where there is no contraindication to a general anesthetic the two following cases illustrate its advantages in bad risks.

Mr. B, age 57, referred by Dr. Eustis. Bilataral polycystic kidney with almost complete suppression of urine. Operated right side June 22, 1916. The kidney presented an enormous conglomeration of cysts varying in size from a pea to an egg, and was of great size, wedged in between the ribs and the ilium and extending almost to the mid line of the abdomen. The last rib was resected to afford more room but it was necessary to make multiple punctures all over the mass before it could be sufficiently reduced in size to be delivered into the wound. We then systematically punctured each cyst and when completed and all cysts thoroughly collapsed the kidney presented a hilum to which was attached a mass of loose cellular tissue which hung from it in folds and represented the former parenchyma.

The wound was closed with drainage. The case was so bad we had naturally not looked for much benefit but were delighted to find the excretion of urine to improve decidedly with a corresponding benefit in the patient's general condition. Ten days later the left side was operated in a similar way. The kidney on this side was probably three quarters as large as on the right. Following this second operation there was a further improvement in the volume of urine and renal function.

Patient made an uneventful recovery and left the hospital sixteen days after second operation with kidney function estimated at about 50% of normal. His general improvement was decided and he was able to resume business with a fair degree of comfort, but was kept under constant medical observation. He remained in fairly good health until a short time before death on February 9, 1920. 3½ years.

Miss H. age 27, referred by Dr. Simon. General tuberculosis with large tuberculous kidney of left side which caused much discomfort. It was hoped by its removal to so improve the patient as to permit her to better resist the progress of the disease elsewhere.

Operated 1-20-21 removing the kidney which measured 7 by 4 inches and when opened was found to consist of a series of pus sacs. Recovery was uneventful. Left the hospital 2-14 much improved, but after a few weeks returned due to the progress of the tuberculous trouble elsewhere. After about one month's stay left for home in an unfavorable condition.

DISCUSSION.

Dr. Allan Eustis, New Orleans: I was fortunate in being present when Dr. Allen operated on this man, and I kept up a periodic observation of the man three and a half years following operation. His kidney function before the operation was 5 per cent. phenolsulphonephthalein excreted in two hours, which is an unfavorable sign. The blood pressure (systolic) was 220. He was undoubtedly a case that could not have been operated under general anesthesia. You could palpate his large polycystic kidneys through the abdominal wall, and when I referred him to Dr. Allen I was skeptical as to his ability to operate on that man and go through the abdominal wall without producing some pain. I talked to the man during the course of the first and second operation, and at no time did he even feel a twinge of pain. I bring this out because I have seen a great many surgeons operate, and I have come to the conclusion that their idea of local anesthesia is really relative. Some of them are satisfied if the patient does not jump off of the table. It is only by such careful, systematic anesthesia as Dr. Allen has brought out and the identification of the nerves that complete anesthesia can be produced. This presupposes thorough knowledge of anatomy. I feel sure that this point is not thoroughly appreciated by the average surgeon, and as an internist I can speak freely and with an unbiased mind.

Dr. Carroll W. Allen, New Orleans (closing): I thank Dr. Eustis for his remarks, and I wish to say that the success of local anesthesia rests on two things, a thorough knowledge of anatomy, particularly the nerve anatomy, and a thorough understanding of the action of local anesthetics. I do not think a knowledge of anatomy alone is sufficient, and I believe too many men try to do local anesthesia by simply studying the technical side, and such men do not understand the fundamental principles behind local anesthesia. The foundation upon which local anesthesia rests is the isotonic and hypertonic action on the derma. I have several times been asked to see some one operate under local anesthesia, the patient showing bad symptoms, with too much cocain in the Schleich solution. It was not too much cocain at all, but too much adrenalin. I believe the best way to succeed, and the one that has given me most satisfaction, is to study the fundamental things in connection with local anesthetics, such as the physiology, the action of cocain and its derivatives, and the toxicology. That added to a thorough knowledge of nerve anatomy enables you to perform very nearly any operation under local that you can under general anesthesia if you take the time and patience to do it.

A STATISTICAL STUDY OF THREE THOUSAND CASES OF MENTAL DISEASES.*

By HENRY DASPIT, M. D.. New Orleans.

CLASSIFICATION ACCORDING TO SEX, COLOR AND AGE.

WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl
Under 10 years					10 to 20					20 to 30					30 to 40				
....	....	....	....	0	1	....	....	....	1	2	....	3	1	6	1	2	....	1	4
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	1	....	1
....	....	....	....	0	....	....	....	....	0	17	5	9	5	36	69	30	34	19	152
....	....	....	....	0	....	....	....	....	0	9	2	4	1	16	19	1	8	2	30
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
....	....	....	....	0	....	....	....	....	0	1	....	1	....	2	2	....	1	....	3
....	....	....	....	0	....	....	1	....	1	19	1	5	4	29	38	1	9	2	50
....	....	....	....	0	1	1	....	....	2	5	3	....	1	9	2	....	1	2	5
....	....	....	....	0	....	....	1	....	1	1	....	1	1	3	2	2	....	6	10
1	....	....	....	1	2	5	1	6	14	....	3	2	4	9	2	1	....	....	3
....	....	....	....	0	4	1	....	4	9	22	23	7	44	96	10	40	11	32	93
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	....	2	2
....	....	....	....	0	26	7	16	6	55	89	22	35	30	176	28	25	4	6	63
....	....	....	....	0	....	....	....	....	0	11	....	2	2	15	25	16	13	6	60
....	....	....	....	0	4	8	5	3	20	28	7	23	6	64	21	7	11	3	42
2	1	....	....	3	1	5	....	....	6	1	4	....	2	7	1	....	....	....	1
1	....	....	....	1	23	9	7	6	45	42	16	6	6	72	28	17	4	4	63
5	5	....	3	23	20	10	9	6	45	38	25	24	10	97	8	17	13	17	45
3	2	....	....	5	1	....	2	1	4	19	12	5	3	39	20	2	8	7	37
....	....	....	....	0	20	15	5	4	44	31	27	4	2	64	10	3	8	3	24
....	....	....	....	0	1	1	....	....	2	46	6	9	3	64	103	8	19	4	134

40 to 50					50 to 60					60 to 70					Over 70				
WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl	WM	WF	CM	CF	Ttl
1	....	....	....	1	....	....	1	....	1	....	....	....	....	0	....	....	....	....	0
....	....	....	....	0	2	1	3	....	6	40	38	35	50	163	19	10	8	7	44
5	3	6	....	14	4	4	2	5	15	6	2	5	1	14	10	5	9	6	30
103	15	52	18	188	37	4	18	7	66	7	1	2	1	11	....	....	....	....	0
2	1	1	....	4	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
1	....	....	....	1	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
27	4	3	3	37	14	3	2	....	19	....	1	1	....	2	1	....	1	....	2
1	1	....	....	2	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
1	1	1	1	4	3	....	....	....	3	1	....	2	....	3	....	....	....	....	0
3	4	1	2	10	....	....	....	1	1	....	....	....	....	0	....	....	....	....	0
13	20	6	15	54	11	4	2	6	23	6	3	3	1	13	1	1	....	....	2
2	18	1	13	34	12	28	3	7	50	4	15	1	3	23	3	5	1	1	10
8	13	1	....	22	1	2	2	....	5	2	1	....	....	3	....	....	....	....	0
17	18	4	....	39	8	9	3	2	22	3	2	1	....	6	1	....	....	....	1
8	4	5	4	21	1	1	....	1	3	1	....	....	....	1	....	....	....	....	0
....	....	....	....	0	....	....	....	....	0	....	....	....	....	0	....	....	....	....	0
29	11	1	2	43	12	3	....	....	15	4	....	....	....	4	....	....	....	....	0
3	9	10	2	24	1	2	1	1	5	1	....	....	....	1	....	....	....	....	0
1	2	1	....	4	4	3	3	2	12	3	2	2	....	7	....	....	....	....	0
7	1	2	1	11	....	....	1	....	1	....	....	....	....	0	....	....	....	....	0
66	9	8	4	87	30	3	3	1	37	8	....	....	....	8	1	....	....	....	1

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*Addendum to article under this title, published in the August number, and inadvertently omitted at the time.—Ed.

NEWS AND COMMENT.

The Law Provides Amply For The Control of Narcotic Export And Imports according to the narcotic section of the Internal Revenue Bureau, which, after compiling figures obtained from the Department of Commerce, states that exports have decreased from more than 600,000 ounds to less than 80,000 during the past year, ending June 30, 1921. Imports have decreased from more than 600,000 pounds to less than 5,000. This large falling off in both exports and imports coincides with the going into effect in May, 1920, of the more drastic regulations governing the exportation and importation of narcotic drugs and preparations.

The Shepherd-Towner Bill Passed. The newspapers have announced the passage of the Shepherd-Towner Bill in spite of the great protest made by the medical profession as a whole. Although the medical profession of the country is in a better position to judge whether or not this measure was needed, their suggestions were apparently not heeded. The Bill provides for the state furnishing aid to expectant mothers and was passed almost unanimously.

Red Cross Notes. The National Red Cross Convention will be held in Columbus, Ohio, October 4 to 8 inclusive. Several thousand delegates and visitors from all parts of the world are expected to attend. A Historical Pageant of the Red Cross will be held as the crowning effort of the four-day program, in which the services of more than 3,500 participants are expected, including a chorus of 1,100 voices and 2,500 men, women and children, from all parts of the United States.

Sir David Henderson, Director General of the League of the Red Cross Societies since its founding, in the Spring of 1919, died in Geneva Switzerland, on August 17, at the age of 59 years. Sir David's directorship of the League has been marked by a steady expansion until today its member societies number 32, representing almost every country that has its Red Cross Society.

American Chemical Society held its fall meeting in New York on Setember 6 to 10, and was the largest meeting ever held by the Society, as there were about 300 or 400 British and Canadian members of the Society of Chemical Industry who came down as guests of the A. C. S. after holding the meeting of their own Society in Canada. Besides, a further factor contributing to the success of the meeting, was the opening of the National Exposition of Chemical Industries, September 12, just after the close of the chemists conclave.

DEATH OF GABRIEL LIPMANN. The discoverer of the process of reproducing photographs of things in their natural colors, Professor Gabriel Lipmann, one of the most famous French physicists, died recently on board the steamship "France" during a return voyage to France from the United States and Canada. Prof. Lipmann had reached the age of 73 years. He was awarded the Nobel prize for physics in 1918.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER announces a seven days' campaign to be designated "Cancer Week" and to extend from October 30 to November 5. The purpose of the movement is to reach as many persons as possible in the United States and Canada and to urge upon them the vital message of cancer control. The large publicity which has been given regarding the subject of cancer mortality has succeeded insofar as to stop the increase in the death rate from this disease, statistics showing that since 1916 it has remained practically stationary.

THE SHREVEPORT MEDICAL SOCIETY will meet October 4, when the following paper will be presented: "The Expert Medical Witness", by a member of the Shreveport Bar, with Drs. W. P. Butler and Louis Abramson to open the discussion.

THE AMERICAN PHARMACEUTICAL ASSOCIATION held its annual meeting in New Orleans September 6 to 9. Charles H. Packard, of Boston, president, will be succeeded by Samuel L. Hilton of Washington. An interesting meeting was held consisting of sections on history, commercial interests, practical pharmacy and dispensing and a women's section. Alumni luncheons, a night dance at the Grunewald Hotel Cave, and a ride on the Mississippi river formed a part of the entertainment program. Lucius L. Walton, of Williamsport, Pennsylvania, will head the National Boards of Pharmacy for the coming term.

THE MEDICAL SOCIETY OF VIRGINIA will meet at Lynchburg October 18 to 21. Titles for a number of interesting papers have been sent in and the subject selected for general discussion is "Systemic Manifestations of Chronic Local Infections" which will be considered under the headings of general considerations, medical treatment and surgical treatment.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION, meeting on October 13, 14, 15, at St. Louis, has issued its preliminary program. There will be two days of clinical presentations by leaders in the various specialties; one day of clinics, on the fifteenth, and they will be held, as per printed schedule obtainable at registration desk, at the various St. Louis Hospitals and Universities; clinical discussions and illustrated demonstrations of Borderline Medical Subjects, by a group of distinguished clinicians. Each number on the scientific program is to be an address instead of the usual paper.

PERSONALS: In a letter received by a New Orleans physician from the American Consul, Tampico, Mexico, we learn that one of the physicians in Tampico who attended the late Dr Gustave Mann states that he died of typhoid fever, after an illness of several weeks. It was not thought, however, that he had typhoid until a short time before his death, nor was his condition thought to be serious, so much so that Mrs. Mann and children were not in Tampico at the time of the doctor's death. His remains were interred in the cemetery at Tampico.

REMOVALS: Dr. H. A. Folse, from Charity Hospital, New Orleans, to the Hospital, Belize, British Honduras.

Dr. Shirley H. Betts, of Mooringsport, La., to El Paso, Texas, at Long's Sanitarium.

Dr. J. A. Storck, from No. 508 Medical Building to No. 503 Title Guarantee Building, New Orleans.

Dr. A. C. Gage from New Orleans to Truxillo Railroad County Hospital, Truxillo, Honduras.

Dr. Carl E. Granberry, from New Orleans to Gulfport, Mississippi, where he will be with the U. S. Public Health Hospital.

Dr. W. G. Milholland, from New Orleans to Fresno, California, with the Burnett Sanitarium Company.

Dr. Benjamin Manhoff, from Lake City, Florida, to No. 406 St. James Building, Jacksonville, Florida.

Dr. G. G. McKellar, from Plain Dealing to Couchwood, Louisiana.

Died: On Thursday, September 1, Dr. William Martin Perkins, of New Orleans, at the age of 48 years. Dr. Perkins will be regretted by a host of friends whose deepest sympathy he has had for the past year, ever since his return from the War where he contracted the disease which terminated in his death. He was for many years connected with the Faculties of the Graduate and Under-graduate Schools of Medicine of Tulane University in the Department of Surgery.

On Monday, September 5, Dr. Edwin J. Graner, of New Orleans, aged 58 years. Dr. Graner's health had been failing for some time and the end was not unexpected. He will be remembered as former president of both the Louisiana State Medical Society and the Orleans Parish Medical Society.

On Saturday, September 10, Dr. Ivan F. Siekmann, aged 59 years. A resident of New Orleans and member of the Louisiana State and Orleans Parish Medical Societies.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for August, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	3	2	5
Intermittent Fever (Malarial Cachexia)	1		1
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough		3	3
Diphtheria and Croup			
Influenza	2		2
Cholera Nostras			
Pyemia and Septicemia	1	2	3
Tuberculosis	29	37	66
Cancer	25	5	30
Rheumatism and Gout	1	1	2
Diabetes	9	2	11
Alcoholism	1		1
Encephalitis and Meningitis	1	1	2
Locomotor Ataxia	2	1	3
Congestion, Hemorrhage and Softening of Brain	34	11	45
Paralysis	3	2	5
Convulsions of Infancy	1		1
Other Diseases of Infancy	18	16	34
Tetanus			
Other Nervous Diseases	3	1	4
Heart Diseases	58	37	95
Bronchitis	4		4
Pneumonia and Broncho-Pneumonia	17	12	29
Other Respiratory Diseases	1		1
Ulcer of Stomach			
Other Diseases of Stomach	2		2
Diarrhea, Dysentery and Enteritis	10	13	23
Hernia, Intestinal Obstruction		2	2
Cirrhosis of Liver	1	5	6
Other Diseases of the Liver	2	1	3
Simple Peritonitis			
Appendicitis	17	1	18
Bright's Disease	25	13	38
Other Genito-Urinary Diseases	13	12	25
Puerperal Diseases	4	6	10
Senile Debility	1		1
Suicide	2	2	4
Injuries	32	8	40
All Other Causes	28	19	47
Total	351	215	566

Still-born Children—White, 23; colored, 23; total, 46.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death Rate per 1000 per annum for Month—White, 14.52; colored, 23.45; total, 16.98; Non-residents excluded, 14.94.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.05
Mean temperature	84
Total precipitation	3.09 inches

Prevailing direction of wind, southwest.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 NOVEMBER, 1921 No. 5

EDITORIAL.

A TEST FOR EARLY TUBERCULOSIS.

Having studied the unilateral mydriasis, due to irritation of the sympathetic nerve, which is known to happen sometimes in recent tuberculous lesions of the apex, Sergent concluded that it occurred oftener than was generally thought, as could be observed if it was sought for more systematically. In a recent communication to the French Academy of Medicine he also reported the results of his experiments undertaken with the view of determining whether a latent pupillary inequality could not be made evident by the use of a mydriatic.

He presented a series of fifty cases, some free from lesions and others with either suspected or confirmed lesions, which showed conclusively the practical value of the test.

The method consists in instilling two drops of a 1-1000 solution of atropia in each eye, being careful to apply the same quantity on both sides in the conjunctival sacs, and to make sure that it does not escape. The reaction must be watched closely: beginning in ten to twelve minutes, it increases progressively until it is complete in twenty to twenty-five. Whenever there is hypersensitiveness of one pupil, it begins dilating before the other, the dilation proceeds more rapidly and reaches its maximum earlier. At the same time the sensitized pupil loses the light reflex and the accommodation reflex some time before the other, a very important point. During the period of the maximum effect of the atropia, lasting from one to three days, both pupils are equally and completely dilated; then the pupil on the sound side begins gradually to return to the normal, while the sensitized pupil remains large and another stage of inequality is noticed, which lasts much longer than that observed after the instillation begins to take effect. Of course, in individuals free from tuberculosis the test proves negative.

There is no danger attached to the measure, provided it is not practiced on aged subjects nor on those suspected of having a tendency to glaucoma. The disturbed vision for one or two days is of no moment and the patient should be warned thereof.

The diagnosis of incipient tuberculosis is of such importance that any means which may aid in settling a doubtful diagnosis should be welcomed. It is to be hoped that Sergent's observations will be confirmed and will prove to be of great value in clinical phthisiology.

THE SOUTHERN MEDICAL ASSOCIATION.

The fifteenth annual meeting of the Southern Medical Association, now the second largest medical organization of the United States, will be held in Hot Springs, Arkansas, on November 14 to 17, 1921, under the auspices of the Garland County-Hot Springs Medical Society and the Arkansas Medical Society.

The railroads have granted a one and one-half fare for the round trip, with tickets on sale beginning November 10, the return limit being November 21. Identification certificates should be secured early from the office of the Association.

The Eastman Hotel will be open only to doctors during the week of the meeting, and will be the headquarters of the Association. There are numerous other hotels of high class, both on the American and the European plan, so there is no chance of shortage of accommodation.

A fine program is offered, together with the usual receptions, alumni dinners, rides, etc. Additional features will be golf championship games and a boxing contest. The principal attraction, of course, will be the wonderful baths, the Bath House Association having extended the courtesies of their bath houses to the members and their wives.

New Orleans and Louisiana usually send a goodly representation to the meetings of this Association, and we hope this year will not only not prove to be an exception, but will be a banner one as far as attendance from this section is concerned.

THE CHARITY HOSPITAL X-RAY DEPARTMENT.

On October 15 the reorganized and rehabilitated X-ray department of the Charity Hospital was formally inaugurated. It was open to the inspection of invited guests from 3 to 5 in the afternoon and a large number availed themselves of the opportunity to pay it a visit and offer their congratulations to the officers of the hospital, and especially to Dr. Amédée Granger, under whose direction the improvements were carried out, and to whose initiative they are chiefly due.

The various waiting, photographing, fluoroscope, developing and treatment rooms are efficiently and economically distributed and make a fine appearance in their new dress of fine paint. We now have a department we can feel proud of. The staff of the hospital will benefit through the increased efficiency of the department, and will be aided to a corresponding degree in their efforts to help the unfortunates under their care in this State institution.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

A TRIBUTE TO DR. PIERRE ROUANET, THE DISCOVERER OF THE CAUSE OF THE HEART SOUNDS, AT ONE TIME A PRACTITIONER IN NEW ORLEANS.

By EDMOND SOUCHON, M. D., H. F. A. C. S.
Professor Emeritus Tulane School of Medicine.

While strolling in a little quasi-deserted cemetery of a small country town, Thibodaux, La., on Bayou Lafourche, in search of the family tomb of Chief Justice White, I came across the tomb of a celebrated French physician, Dr. Pierre Rouanet, the discoverer of the cause of the heart sounds. I was startled and deeply moved upon reading this eminent name on a blackened, weather-stained, white marble slab affixed to a dilapidated brick tomb. It has stood the rains, storms and suns of seventy-two years.

Dr. Rouanet was born in Languedoc, France, at Labastide, department of Tarn, in 1787, and died in Thibodaux, La., in 1849. Studying medicine, he graduated from the Paris Faculty, his thesis being the remarkable dissertation, ''Analyse des bruits du Cœur,'' a discussion of the heart sounds and their causes, which is now one of the classics of medicine. If I remember well, his theory was that the heart sounds were produced by the closing of the valves (claquement valvulaire). Rouanet was for some time interne in sundry Parisian hospitals, and had already commenced practice when unfortunate speculations on the Bourse destroyed his financial resources and compelled him to seek his fortune in America. Settling in New Orleans, he soon established himself in practice, and from this city he from time to time advanced sums to his friend, Dr. Raymond, for the purpose of reimbursing his broker for the losses sustained by the financial reverses above mentioned. This course was regarded as exceptionally honorable, as it was not necessary or obligatory in the strict legal sense.

In New Orleans, Rouanet enjoyed a great reputation as a diagnostician in heart-disease, particularly through his skill in auscultation. He was frequently in consultation for cardiac cases, and his diagnoses came to be regarded as infallible, although the therapy of the period was far from efficacious. On account of his great reputation as a cardiac specialist, a number of practical jokes were played upon Rouanet by facetious colleagues. On one occasion the heart of a goose was passed off upon him as the heart of a child, in a series of pathological preparations. Another colleague related this episode in a satirical copy of verses, which were circulated freely in the city and led to a duel with Rouanet, in which both contestants were wounded. At the end, although the seconds declared that honor was satisfied, Rouanet wanted to begin again. Rouanet was an able surgeon as well as internist. I well remember when I was a young student of twenty in Paris, the echoes of the polemics regarding Rouanet's theory.

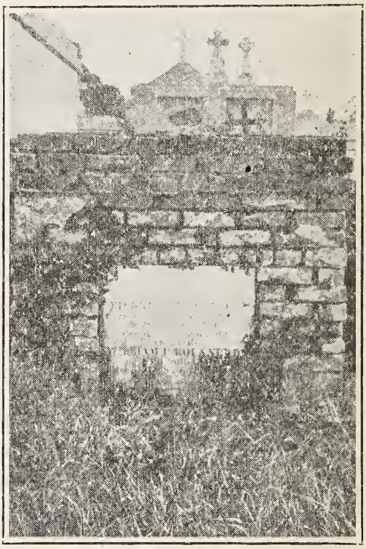
After practicing medicine in New Orleans for some time, Dr. Rouanet emigrated to a small settlement on Bayou Lafourche, the little town of Thibodaux. He married there Alice Pellegrain, a native of New Orleans, aged 30 years. He was then 41 years old. Two children were issued from the marriage, one daughter and a son. This boy was born in 1820 and became Dr. William Pierre Rouanet. He died in 1853 at the age of 33 years, of yellow fever, and was buried in his father's tomb. He died four years after his father.

Dr. Rouanet lived to be sixty-three years old and died in Thibodaux of hemiplegia in 1849. His full name was Jean Pierre Rouanet.

There is a melancholy shade of the irony of fate in the fact that such a life so brilliantly begun should have ended in such obscurity. *Sic semper gloria mundi.*

It would be an interesting psychological problem for an expert to try to unravel the processes through which the mentality of Rouanet passed, to have induced him to leave a big city where he was prosperous and drift to and finally strand in a little settlement of a few hundred people such as was Thibodaux eighty-five years ago. The only communication with the city was by steamboat, but only during six or eight months of high water.

It may be that the incidents of his duel may have soured him against the city.



The first half of his life was strenuous enough, but the second part, some thirty years, he spent in the quiet, calm, uneventful life of a country practitioner. I do not believe that one doctor in Thibodaux knew what kind of a man Rouanet was. I am sure he did not condescend to tell them.

The photograph shows the little brick tomb of Rouanet. It is in a dilapidated condition. The surface plastering has been swept away and the mortar between the black bricks is dropping, leaving large cracks. It will not be very long before they crumble down on the mortal remains of our friend Rouanet.

He did not find fortune in New Orleans, it is said. But he did better in Thibodaux. His great-granddaughter writes me that he owned the square of ground on which his house stood, and that the records in the courthouse in Thibodaux showed that he owned a large plantation on the left bank of the bayou. The records of the courthouse in Thibodaux show that in 1842 he mortgaged his house in the town for $1040. It was the finest house in the little town, the first one to be papered inside. It may be that he mortgaged his house to send his son to Paris to study medicine. The son was then twenty-two. However, some old residents of Thibodaux say that he owned a sugar plantation on the other side of the bayou, as already stated.

His only descendant in Thibodaux is a great-granddaughter, Miss Alice Hunt.

Some thirty miles north of Thibodaux stands, on the Missisipi river, the town of Donaldsonville. It is the resting place of another celebrated French physician, Dr. François Prévost, the first in America to perform Cesarian section. It was quite a feat of daring for an obscure country doctor, quite on a par with the pluck and luck of Ephraim McDowell. Prévost's achievements have been collected in the Reports of the Louisiana Historical Society for the year 1915, in an article by the writer, entitled "Contributions of Louisiana to Medical Science."

It is indeed noteworthy that these great surgical achievements have been done by country doctors: Ephraim McDowell, of Danville, Ky.; Prévost, of Donaldsonville, La., and Marion Sims, of Montgomery, Ala.

I am indebted to the genial and courte[illegible] Thomas Stark, of Thibodaux, La., for obtaining valuable data.

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Copies of written documents in the possession of Miss Alice Hunt, his great-granddaughter, now in Thibodaux, La.

Records in Court House, Thibodaux, La.

A CLINICO-PHILOSOPHIC INTERPRETATION OF IMMUNO-THERAPY.

By G. H. SHERMAN, M. D., Detroit.

That many diseases are communicable and that in certain diseases one attack renders the individual subsequently immune has been known since the dawn of medicine; but it was left to our generation, through the development of the science of bacteriology, to ascertain the causes of transmitted disease and the nature of the immunizing mechanism. Bacteriology has demonstrated that a surprisingly large proportion of our diseases are caused by the ever-present germs and that health is maintained only by the workings of some defensive properties, inherent in all living tissues, which resist the attacks of pathogenic bacteria. The basic principle of vaccine therapy is this production of immunity, and its aim is to take advantage of nature's immunizing methods and to utilize them for prophylactic and curative purpose.

Anti-Bacterial Substances of the Blood.—Extensive research work on lower animals by numerous investigators has quite accurately determined the presence of anti-bacterial substances in the blood. Buchner, Nutall and others found that fresh normal blood serum has a bactericidal power, dissolving to a limited extent many kinds of germs. Park showed that as many as 30,000 germs per cubic centimeter of fluid will all be destroyed by 0.1 c. c. mil. of normal blood serum incubated at 98.1 degrees F. for 27 hours. When 100,000 germs are added to the same amount of serum, the number of germs will be very much diminished during the first and second hours of incubation; but if the process of incubation is continued for 27 hours, the number of germs is materially increased, the remaining live germs having multiplied. This shows that normal blood serum contains a substance that is consumed while destroying germs, and that if there be any germs left after this substance is consumed they will at once multiply without further hindrance.

Ehrlich and Morgenroth found that this bactericidal power of fresh blood serum is due to the presence, in very minute quantities, of a variety of substances termed "anti-bodies," which combine with another substance called "the complement," present in comparatively large amounts. These antibodies fit a large variety of organisms, but when an animal is immunized to some specific organism the anti-bodies corresponding to that organism are enormously increased, while the amount of complement present remains practically stationary.

Since the germ-destroying power of the blood depends on the combination of the anti-bodies with the complement, it can readily be seen that in cases of advanced infections the immunizing process may be retarded from a deficiency in complement.

Longcope (*University of Penn. Med. Bulletin,* 1902, XV, 331), in an investigation of the complement content of the blood in infectious diseases in general, has found that the complement is constantly low, and is diminished still more when septic complications intervene.

Gay, Perkins, Thompson (*Jour. Med. Research,* 1903, X 196), found a diminished bacteriolytic complement constant in variola. Wassermann suggests (''*Immune Sera,''* by C. F. Boulduan, 1911, p. 81) that the curative power of many bactericidal sera might be increased by the simultaneous injection of the sera of certain normal animals in order thus to gain an increased amount of complement.

In infections caused by exotoxic organisms such as the diphtheria and tetanus bacilli, distinct anti-toxins are formed as the principal immunizing factors. In the infections caused by the endotoxic pus group of organisms, of which the streptococci, pneumococci, staphylococci, colon bacilli and typhoid bacilli are the most important, the immune body or amboceptor expresses itself in the form of agglutinins, lysins, precipitins, etc.

Metchnikoff found that the white corpuscles play an important role in the immunizing process as phagocytes or ''devouring cells,'' having the power to take up germs and destroy them by a process of digestion.

The Opsonins.—Sir A. E. Wright, of London, following up Metchnikoff's work, found that the phagocytic power of the white corpuscles was very low or almost entirely negative unless they were suspended in blood serum, and that when the corpuscles are suspended in blood serum obtained from previously immunized animals their phagocytic power is much greater than when they are suspended in ordinary serum. He also found that this phagocytic power is specific, it only appearing when the same kind of germs that the animal was immunized with are used in the experiment. This is the fundamental principle of this subject. From these investigations Wright concluded that the blood serum contains a substance which has a sensitizing effect on the invading organism, and that this substance is naturally increased during the immunizing process. This bacteriotropic substance he termed ''opsonin'' (Greek, Opsono, I prepare food for). It was this phagocytic power of the blood, as demonstrated in the incubated test tube, that led Wright to make extensive investigations as to the opsonic power of the blood in man under various conditions. A measurement of this power he calls the "opsonic index."

Wright, in a paper published in *The Lancet*, March 29, 1919, introduces some new words for the purpose of designating certain conditions in infectious processes, and, to get his ideas presented clearly, will quote him as follows:

"To combat bacterial infection the organism must have defensive powers. That power of guarding itself against infection we may—the suggestion is Lord Moulton's—call phylactic power. The leucocytes and the bacteriotropic substances in the blood fluids we may call phylactic agents. But phylactic power in the blood will not be all that is required. Military similes become stale; but let me here just indicate that the requirements for the defense of a state are not limited to the possession of a standing army. There is required also efficient staff work to bring your defensive force to the point attacked. The self-same thing applies to the body. You must have not only phylactic power in the blood, but also provision for the transport of your leucocytes and bacteritropic blood fluids to the site of infection. Let me call this transport of phylactic agents to the site of infection kata-phylaxis. (You have a similar use of the prefix kata in cataplasm and kataphoresis); and let me term any condition which interferes with that transport an anti-kataphylactic influence."

"Now in the body, when in sound physiological condition, we have efficient kataphylactic arrangements—blood fluid and leucocytes have unrestricted access to every portion of the body. But when anti-kataphylactic influences are brought to bear, when the arterial supply is interrupted or is closed down by collapse, or the body is petrified by cold, and the alkalinity of the lymph is blunted off by acid metabolites derived from the muscles, then the emigration of leucocytes is arrested and the transport of blood fluids into the tissues comes to a standstill. And with that all pathogenetic microbes which may find entrance—even microbes like gas-gangrene bacilli which grow with immense difficulty in the healthy blood fluids—flourish unopposed.

"Phylaxis and kata-phylaxis—these are the normal defenses of the body. But there are also resources in reserve. By a process comparable to a mobilization for the reinforcement of a standing army, the phylactic powers of the blood fluids can be increased. We may call that epi-phylactic reinforcement, or epi-phylactic response. Such epi-phylactic response manifests itself, as you know in connection with, we may say, all infections that give rise to constitutional disturbance. And such response follows, as you know also, upon bacterial inoculations when conducted with appropriate doses. But, as I pointed out already in connection with one of my first batches of experimental anti-typhoid inoculations, there follows directly upon the inoculation of a large dose always a phase of diminished blood resistance; I called it a negative phase. It would be more conformable to the system of terminology I am advocating to employ here the term 'apo-phylactic phase.'

Ec-Phylaxis.—"We now come to something which is much less familiar, but, I think, even more important.

> "I have in view here conditions which I drew attention to twenty years ago in connection with typhoid and Malta fevers, coining for my propagandist purposes the terms 'regions of diminished bacteriotropic pressure, non-bacteriotropic envelopes.' These terms may perhaps have been unsuccessfully coined; they have, at any rate, not proved effective missionaries of the idea, and I would propose now to try to put into currency instead the terms 'ec-phylaxis, ec-phylactic region, and ec-phylactic envelope.' When I speak of an 'ec-phylactic region' you will understand me to mean a region in which guardian elements of the blood have been rendered impotent, or, as the case may be, have been excluded. A moment ago, in describing the effects produced by the abolition or suspension of the circulation by injury to the blood-vessels or exposure to cold, I was picturing to you an ec-phylactic region. Much more commonly—and these, of course, are the conditions I described in typhoid and Malta fevers—the ec-phylactic region has been fabricated by a bacterial colony. You will appreciate that every living bacterial colony must become the center of an ec-phylactic sphere. It will become so (a) by radiating out toxins which will (when of sufficient strength) repel leucocytes; (b) by absorbing bacteriotropic substances from the blood fluids; and, probably, (c) by abstracting anti-tryptic power from the blood fluids and so converting these into a congenial culture medium."

The enzyme or ferment theory of immunization, as worked out by Vaughan, Freidberger, Abderhalden and others, has become quite firmly established. This theory leads us to the most essential factor of life—digestion; and digestion depends on the presence of enzymes or ferments, because it is by means of these ferments that food substances are prepared, really dissolved, so they may be absorbed and assimilated. In the more highly developed forms of life the digestive organs are set aside for this purpose. Single cell organisms, on the other hand, are so constituted that all the functions of life are contained within the one cell. The single-cell organism lives and grows by absorbing and assimilating food substances with which it comes in contact. Where necessary, the germ secretes ferments from its surface for the purpose of digesting or dissolving this food so that it can be absorbed and assimilated, thereby carrying on its life function.

Of the various foods or substances that sustain life, protein occupies the most important position, because tissue cells as well as single cell organisms are principally of protein composition. In fundamental construction all proteins, whether of animal, vegetable or germ origin, are essentially the same; but animal as well as vegetable and germ proteins, obtained from various species, differ from one another in some specific character. The protein obtained from the blood serum of one species of animal cannot be injected into the blood of some other species without producing serious physiologic disturbances. Horse serum protein, when injected into a guinea-pig, will produce certain definite physiological disturbances, and the same is true when horse serum is injected into man. Egg-white, and in fact all abnormal proteins, whether of animal, vegetable or germ origin, will produce the same disturbance under the same conditions. These disturbances were first observed as a result of animal experimentation in the production of anti-diphtheritic serum and are now known as protein poisoning or anaphylaxis. An enormous amount of experimental research work has been done on this phenomenon of anaphylaxis and its relation to infectious diseases, and to comprehend the enzyme theory of immunization it is necessary to briefly bring forward its most important factors.

Of all animals, the guinea-pig has been found to give the most marked and most constant symptoms of protein poisoning, and for this reason is well adapted for studying this phenomenon.

Kolmer ("Infection, Immunity and Specific Therapy," 1915, p. 537) says:

> "Horse serum, when injected into normal guinea-pigs, gives rise to no symptoms. As much as 20 c. c. may be injected into the peritoneal cavity, and small amounts may even be injected into the brain, without causing any untoward symptoms."
>
> "When a small dose of serum is injected intravenously, intraperitoneally, or subcutaneously, and ten days later a second injection is made, the animal develops symptoms of acute anaphylactic asphyxia, which, in the majority of instances, terminates fatally. In five or ten minutes after injection the pig becomes restless and then manifests indications of respiratory embarrassment by scratching at the mouth, coughing, and sometimes of spasmodic, rapid or irregular breathing; the pig becomes agitated, and there is a discharge of urine and feces. This stage of exhilaration is soon followed by one of paresis or complete paralysis, with arrest of breathing. The pig is unable to stand, or, if it attempts to move, falls upon its side; when taken up it is limp; spasmodic, jerky and convulsive movements now supervene. This chain of symptoms is very characteristic, though they do not always follow in the order given. Pigs in the state of complete paralysis may fully recover, but usually convulsions appear and are almost invariably a forerunner of death. Symptoms appear about ten minutes after the injection has been given; occasionally in pigs not very susceptible they are delayed 20 to 45 minutes. Animals developing late symptoms are not very susceptible and do not die. Death usually occurs within an hour, and frequently in less than 30 minutes. If the second injection be made directly into the brain or circulation, the symptoms are manifested with explosive violence, the animal frequently dying within two or three minutes."—**Rosenau.**

The same symptoms would develop from inoculating guinea-pigs with egg-white or other animal or vegetable proteins in the same way, but no symptoms of anaphylaxis will develop unless the same kind of protein is employed in the first and subsequent inoculations. Vaughan ("Protein Split Products in Relation to Immunity and Disease," chapter V) succeeded in splitting up various kinds of animal, vegetable and germ proteins by means of sodium hydroxide and absolute alcohol, and in this way obtained a substance constituting about one-third the original protein treated, which, when injected intravenously into guinea-pigs in 0.5 to 5 or more mg. doses, produces characteristic anaphylaxis with symptoms identical to those produced by serum inoculations.

Concerning the splitting of protein by ferments, Kolmer ("Infection, Immunity and Specific Therapy," 1915, p. 550) says:

> "In 1910 Friedberger, by digesting a serum precipitate with normal guinea-pig sera, obtained a similar toxic substance; by means of ferments he secured a protein cleavage poison which, when injected into normal guinea-pigs, produced the symptoms of acute anaphylaxis, the process being entirely analogous to that obtained by Vaughan and Wheeler by protein splitting with alcoholic sodium hydroxid solution. Subsequent studies by Friedberger and his collaborators showed that similar protein poisons could be obtained by digesting micro-organisms, as Bacillus prodigiosus, Bacillus typhosus, and Bacillus tuberculosis, with normal guinea-pig serum. Friedberger and Nathan obtained the poison by digesting agar with fresh serum; Dold and Aoki, by digesting meningococci, streptococci, pneumococci, gonococci, and various other micro-organisms with fresh normal guinea-pig serum. As was expected, cleavage could be facilitated and hastened by using immune serum specific for any particular bacterial or other protein."

These experiments show that poisonous substance may be obtained from animal, vegetable or germ protein by disrupting the protein molecule with chemicals or by digesting it with blood serum. Normal blood serum contains a small amount of this digestive substance, which has been called "alexin," "anti-body," and by other names. This substance will digest a variety of proteins, more particularly germ proteins, and constitutes the normal non-specific germicidal substance contained in the blood which is now regarded as a non-specific proteolytic ferment. When an abnormal protein gains entrance to the blood or tissues of the body which is not readily digested and disposed of by this non-specific proteolytic ferment, a protest in tissue cell activities develops with the production of a specific digestive substance which digests the abnormal protein. From our present knowledge, this substance should be classed as a specific proteolytic ferment or enzyme specially prepared by tissue cells for this particular emergency. When this condition has developed the animal is said to be sensitized to that particular protein whether of animal, vegetable or germ origin. This sensitizing process starts from developing and accumulating a comparatively large amount of this specific proteolytic ferment. If a considerable amount of the same kind of protein to which an animal has been sensitized is injected after this ferment accumulations has taken place, sufficient specific proteolytic ferment is present in the body fluids to rapidly digest the injected protein and liberate so much of its toxic portion that poisonous symptoms develop. In other words, the animal has become highly immunized to that protein. Whatever the ultimate explanation of immunization may be, it is perfectly evident that protein sensitization with the development of specific ferments by tissue cell activities does take place.

The amount of serum necessary to sensitize a guinea-pig is surprisingly small. Rosenau and Anderson found a guinea-pig that was sensitized by 0.000,0001 mil. As a rule, they used less than 4.004 mil. in their experiments. Besredka places the minimum amount necessary to secure uniform results at 0.001 mil., whereas 0.0001 mil. proved sufficient in a considerable percentage of animals. The sensitizing dose of horse serum ordinarily employed in experiments upon guinea-pigs is 0.01 mil.; amounts ranging from 0.001 mil. to 1 mil. are ordinarily followed by an incubation period of from ten to sixteen days. Large doses also sensitize, but a longer incubation period is required. In order to produce a fatal result, a second or intoxicating dose must be considerably larger than the minimum sensitizing dose, the proportion between the two having been placed by Doerr and Russ as 1.1000; i. e., if 0.001 mil, of serum is injected intraperitoneally in order to effect sensitization, 1 mil. injected by the same route ten or twelve days later would in all probability kill a half-grown guinea-pig, whereas 0.1 mil. subcutaneously would be followed by serious symptoms.

The knowledge obtained from studies of protein poisoning throws much light on the problem of infection and immunization. When an infection takes place, germs multiply in the tissues and fluids of the body, and, to the extent of their growth, a foreign protein is developed within the body. Here the non-specific proteolytic ferment, normally present in the fluids of the body, evidently was not sufficiently active as a foreign protein digestant, otherwise the infection could not have taken place; and, consequently, a reserve force of tissue cell activity is called out for the purpose of producing a specific ferment which digests or exerts some destructive influence on this foreign germ protein. In other words, the tissues are becoming sensitive to this particular germ protein. After sensitization has taken place, the protein molecule of the germ is disrupted, thus liberating its toxic radicle which gives symptoms of disease. In fact, Vaughan contends that all symptoms as a result of infection are principally due to this protein poisoning, and that the main difference in the clinical manifestations of various diseases is due to the parts of the body or organs involved. This contention has received much support, but it has by no means at any time been generally accepted.

Others contend that germs, more particularly the staphylococci, streptococci, pneumococci, colon bacilli, typhoid bacilli and similar organisms, contain endotoxins, and that symptoms of disease develop after the germs become disintegrated in the course of an infection and thus the endotoxin is liberated. Neither of these contentions would account for the symptoms found in many rapidly progressing infections. Both the endotoxin and the split protein theory, as to the liberation of poisonous substances, assume that germ destruction is going on extensively where intense inflammatory and other toxic symptoms exist, while rapid germ development is also taking place at the same time. It is hard to reconcile these two factors. A cultural condition where germ destruction is progressing rapidly is never favorable for germ growth at the same time. Kolmer, in discussing the question regarding the source of poisonous symptoms ("Infection, Immunity and Specific Therapy," p. 570), says: "Likewise in such infections as typhoid fever and pneumonia, I cannot eliminate the action of true toxins and endotoxins, and ascribe all the symptoms to the protein poison or anaphylatoxin. It is not always true that the incubation period is devoid of symptoms. Mild and evanescent symptoms are frequently present, and it is but natural to ascribe these to the effects of bacterial products themselves. After a time, when the bacteria have multiplied and reached special tissues, the symptoms become more intense and the typical lesions are produced. These may be ascribed to the result of the combined action of toxins themselves and the protein poison, rather than to the protein poison itself to the entire exclusion of the metabolic products of the bacteria. In the present state of our knowledge it is, of course, very difficult to decide which symptoms in a given disease are due to bacterial toxins, which to endotoxins, which to ptomaines, which to mechanical action of the bacteria, and which to the protein poison or anaphyla-toxin. While it is perfectly true that we cannot understand symptoms as due to protein poison that cannot be ascribed entirely to toxins and endotoxins, it seems to me unwise to ascribe all lesions and symptoms to the toxins on one hand or the protein poison on the other.''

The Digestive Ferments Produced by the Germs.—In speaking of toxins in this connection, I take it that Kolmer refers to substances which are produced by the germ, not a part of the germ structure.

Virulent infections, where germ multiplication and tissue disintegration are going on rapidly, show that activities by the live organism in maintaining its development and growth are important, if not the most important, factors of such infections.

Vaughan (''Protein Split Products in Relation to Immunity and Disease,'' p. 208), in his experimental work, found a pneumococcus so virulent that 0.000,001 c. c. of a 24-hour bouillon growth would kill a half-grown guinea-pig when injected intraperitoneally, while it required 1 c. c. of a regular stock culture to kill a pig similarly inoculated in the same length of time. In explaining the virulence of this organism, he says: ''Virulence may depend on several factors, but rate of multiplication is certainly one of them, and on a common medium as the animal body this must depend on the effectiveness of the ferments whose function it is to prepare and utilize the pabulum on which the organism feeds.'' Here special emphasis is placed on ferments secretion by the pneumococcus as a means of digesting its food for assimilation, and that by efficient digestion and assimilation rapid growth and multiplication is made possible. Where such a pneumococcus infection is localized, this germ-produced ferment necessarily has a devitalizing or destructive influence on the involved tissue.

Simon (''Infection and Immunity,'' p. 33), in referring to difference in virulence of infecting organisms, says: ''Two possibilities naturally suggest themselves, which may be operative either individually or conjointly. On the one hand we may imagine that an organism, when introduced into the body of an animal which seeks to destroy the invader, adjusts itself to its new surroundings by certain changes of a morphological or physiological character, in consequence of which it becomes relatively or absolutely unassailable by the offensive forces of the host, unless, indeed, it already possesses such properties during its saprophytic existence outside of the body. On the other hand, we can conceive that the infecting organism actively secretes material which tends to counteract or even to destroy the opposing forces of the host.''

Rosenow (*Journal A. M. A.*, Sept. 7, 1912) demonstrated that pneumococci, during a process of autolysis in normal salt solution, produce a substance which has a very toxic influence, and when injected into animals induces no immunizing responses, but rather paralyzes the immunizing forces. He found that pleuritic effusion in cases of pneumonic empyema and pneumonic lung tissue also contain this toxic material. From this he concludes that during the process of toxic pneumonias a continuous autolyzing process of the pneumococcus takes place with the production of this toxic material which plays no part in bringing about an immunity, but rather hinders anti-body formation. I have good reason to believe that this toxic material is the result of ferment activities by the pneumococcus. A virulent streptococcus infection offers a good illustration.

Some years ago, before vaccine therapy came into use, I was called to treat one of these cases. This was a middle-aged woman of previous good health. While darning at 2 o'clock in the afternoon she pricked her thumb with the needle and soon after felt a distinct irritation associated with pain. Four hours later, when I was called to see her, she was suffering with severe pain in the thumb. The thumb was swollen, tender to the touch, and had a somewhat distinct cyanotic appearance. It was only by careful examination that the place where the needle entered could be found. The physical injury amounted to nothing, and I could hardly imagine that so much inflammation could develop from infection by a needle-prick in so short a time, and concluded that a felon was developing and the needle prick was merely coincident. About 8 o'clock that same evening I was again asked to see the patient on account of severe pain in the thumb. I did not call, but prescribed some morphine. The next morning there was no longer any question about the needle-prick being the source of the trouble. There was a distinct area of intense inflammation with indications of necrotic tissue development where the needle had entered. A red lymphatic chain had developed which extended to the shoulder-joint. The lymphatic glands at the elbow were enlarged, and besides other symptoms of a virulent toxic infection there was a temperature of 102.5 degrees F. The condition was recognized as a case of streptococcus infection, and this was later verified by bacterial examination. Here germ development was evidently going on very rapidly. Necessarily, the number of germs that were inoculated with the darning needle must have been comparatively small, but localized toxic symptoms developed soon after the inoculation. If it had been true that these poisonous substances which caused tissue irritation and inflammation were due to split proteins or endotoxins from destroyed germs, it is impossible that germ multiplication could have progressed as rapidly as the inflammatory extension indicated. To assist in overcoming this infection, 40 c. c. of antistreptococcus serum were given at once; but before the progress of the infection was overcome, a necrotic piece of tissue sloughed out where the needle had entered. extending almost to the bone and about three-eighths of an inch in diameter. The most logical explanation concerning the rapid germ development in this case is that the germs produced some substance that had a destructive or devitalizing influence upon the tissues in the infected area which aided the germs in their growth and multiplication, but did not have any material influence in stimulating cell activities toward producing immunizing substances. Every practicing physician has seen these cases of severe infection, and where immunotherapy has not been applied he has almost invariably seen them run a prolonged course and frequently a fatal termination.

It is reasonable to assume that germs have no intent or purpose in their development. They simply grow and multiply if the environment of the place in which they happen to lodge is suitable for their maintenance. When they gain entrance to the tissues or fluids of the animal body, they must utilize substances with which they come in contact for nourishment, and if such substances are not suitable for their sustenance they must die. Germs, being single-cell organisms, obtain their nourishment by absorbing and assimilating substances with which they come in contact and build them into their cell structure. Since the tissues of the animal body are different in bio-chemical construction than that of the invading germs, the tissue substances which germs utilize must be changed before the germ can absorb and assimilate them. This the germs accomplish by secreting ferments from their surfaces which digest and prepare the food with which they come in contact for absorption and assimilation. In other words, the germ digests its way into the tissue which it invades. The digestive substance or ferment with which the germ surrounds itself is really the only means of defense which it possesses. By means of this digestive ferment the germ resists attacks by leucocytes. Leucocytes coming in contact with germs possessing active ferments surrounding them find them too toxic, so, instead of making an attack, the leucocyte retreats; consequently, instead of having a positive chemotoxis we have a negative chemotoxis, and the germ continues to grow and multiply. The germ tissues become irritated by these germ-produced ferments, and if the ferments are sufficiently efficient, germ multiplication with a resulting increased ferment formation will take place and cause tissue destruction and necrosis. These germ produced ferments extend into the tissues immediately surrounding a focus of infection, and not only repel leucocytes, but in all probability neutralize protective ferments which normally exist in the blood and are conveyed to the infected area. This would constitute what Wright designates as "an ec-phylactic sphere." Necessarily where the infection assumes extensive proportions, much of these germ-produced ferments are absorbed by the circulating blood and conveyed throughout the system and irritate the tissues of the body, causing various disturbances, such as fever, rapid pulse, headache, lassitude, pain, etc. In fact, since virulent rapidly progressing infections are the most toxic, and since coincident with this rapid extension of the infection, germ multiplication as a result of efficient ferment production resulting in effective germ nourishment and growth, with a correspondingly low germ-destroying power, it is evident that the major portion of the toxic symptoms in these rapidly progressing infections are due to the germ secreted ferments and not the result of endotoxins from disintegrated micro-organisms.

From the study of protein sensitization we have learned that when abnormal proteins gain entrance to the tissues of the body, specific ferments are produced which have a destructive influence on the abnormal protein, and that similar, if not identical, influences are aroused by tissue cells which are brought in contact with infecting organisms for the production of ferments which have a destructive influence on the germ for the establishment of an immunity. From the unquestioned rapid progress of infections during the time when these germ-secreted ferments are produced most rapidly, it is evident that they possess little if any influences which go toward stimulating cell activities toward producing protective germ-destroying ferments; but, on the contrary, everything seems to indicate that they retard, hinder or cripple tissue cells in their efforts to establish an immunity. The significance of this is more fully appreciated when it is realized that immunity from an infection is developed by the involved tissues in the infected area. If these toxic germ-produced ferments would actively stimulate tissue cells in the infected area for antibody formation, infective processes would be self-limited, because the time would inevitably be reached in every acute infection where the involved cells would be sufficiently stimulated to produce the necessary amount of protective ferments to overcome the infection; but instead of such a favorable result, we often find tissue destruction with fatal terminations.

(*To be continued*)

THE DIAGNOSTIC AND THERAPEUTIC VALUE OF LUMBAR PUNCTURE IN LETHARGIC ENCEPHALITIS.*

By DR. GEO. H. HAUSER, New Orleans.

The present outbreak of Lethargic Encephalitis first appeared in Austria in the winter of 1916-17.[1] A few months later it appeared in Germany, and spread from there to Western Europe and Italy in the Spring and Summer of 1918. The first mention of cases in this country was by Bassoe,[2] who reported several cases seen by him in the winter months of 1918-19. Since that time numerous minor outbreaks and sporadic cases have been reported from all parts of Europe and America.

The review by Flexner[3] in the *Journal of the American Medical Association* of March 27, 1920, of the history, clinical features and pathology of the disease so completely covers the work that has been done to this time that more than passing mention here would be superfluous. His concluding remarks, however, that a wider knowledge of the occurrence of the disease and a better understanding of its nature, gained by studies undertaken from different angles, may lead to more thorough methods of diagnosis, treatment and prevention, has led me to report the findings in a study of the spinal fluids examined, hoping that such a contribution may be helpful in the differential diagnosis of this disease from other affections of the central nervous system.

Historical evidence tends to show that lethargic encephalitis is not a new disease. Outbreaks of a malady presenting similar clinical symptoms seem sufficient evidence of its existence in the 18th and 19th centuries, as shown by Netter[4] and others.[5] A strange coincidence has been its appearance in every instance either closely preceding or following outbreaks of virulent influenza. However, further study of the epidemiology and the probable causative agent of both encephalitis and influenza will be necessary to determine their relationship, especially in view of the work of Loewe and Straus,[6] and of Loewe, Hirshfield and Straus,[7] on the cultivation of a filterable virus from the spinal fluid, naso-pharynx, and brain tissue.

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Spinal Fluid.—The spinal fluid in the cases studied were uniformly clear and usually under considerable pressure. The clear fluid puts aside at once the probability of a purulent meningitis, but does not exclude the possibility of a tubercular or syphilitic meningitis, or of toxic meningismus. In my opinion, the increase of spinal fluid and the symptoms attributed to it are most probably the result of toxic irritation and consequent hypersecretion of the fluid-forming cells, rather than an inflammatory exudate. In other words, a fluid such as is found in cases of true meningismus. There was no coagulun or film formed in the fluid on standing. This is contrary to what may usually be expected in tubercular meningitis.

The cell counts were normal or showed but a moderate pleocytosis. In none of the cases studied did it exceed 11 per cmm. The prevailing cell was the lymphocyte. The cell count is not at variance with that found in the blood stream. Strecker and Marsh have reported a case with a marked increase in cell count at times over 300 cells per cmm., and 55 to 60 per cent neutrophiles; however, since all authors are agreed that the lymphocyte is the predominating cell and the count rarely over 100 cells per cmm., it is highly probable that there was a super-imposed infection from some other cause.

Globulin was not increased in any of the cases. The globulin test is of special value in the differential diagnosis from tubercular, syphilitic and other forms of meningitis in determining the character of the cerebral irritation. In true meningitis the globulin is invarably increased, while it is not in meningismus.

All fluids gave a positive Fehling's Test. The Wassermann reaction was negative in all cases. The necessity of this test is apparent to dismiss the possibility of neuro-syphilis, but it must be remembered that lethargic encephalitis may occur in one with syphilis.

The colloidal gold reaction was negative, the solution remaining unchanged in all tubes. This confirms the belief that the spinal fluid increase is the result of hyper-secretion and not exudative in character, as meningitis always produces a curve in the meningitis zone. Findley and Shisken[9] and Davis and Kraus[10] have noted a curve in the paretic zone in some cases, which showed also an increase of globulin, but this was not noted in the cases studied or confirmed by other authors. Smears and cultures from all cases were negative.

Therapeutic Value of Spinal Puncture.—In the cases studied it was noted that following spinal puncture and drainage of the canal, immediate beneficial results followed, irrespective of other therapeutic measures. The improvement in some cases was continued without further withdrawal of fluid. In two cases it was necessary to repeat the puncture and drainage to hasten the recovery. It was noted, however, that the patients in whom it was necessary to puncture more than once did not relapse to their former mental state, but remained stationary, which condition necessitated further drainage.

The amount of fluid removed varied in different cases, frequently as much as 40 to 50 cc. of fluid being removed at once. The results of draining such a large amount of fluid seems beneficial, and we should not hesitate to drain the canal until all pressure is removed. A good indication is to withdraw the needle when the fluid begins to flow drop by drop.

The spinal puncture should be performed with the patient reclining on his side, or, if the operation is performed with the patient in a sitting position, he should be reclined as soon as the needle is withdrawn. It is well to lower the head below the level of the body for a few minutes.

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DISCUSSION.

Dr. W. H. Seeman, New Orleans: I did not have the opportunity of seeing Dr. Hauser's paper before I heard it read. However, it was just as I expected. The Doctor has given you a very complete review of the literature up to date, and it shows, we know, practically nothing about encephalitis lethargica.

I have had opportunities to examine probably a dozen spinal fluids in suspected cases, many of which were clinically diagnosed as positive, and I can agree with Dr. Hauser that in every instance the cells we found were of the small lymphocyte type, and never exceeded, except in one case, forty cells. In other words, they never exceeded ten cells. In this one case I saw we did have a cell count of 40. I believe in one case there was a slight increase of globulin. In the other cases the reaction was practically negative. The colloidal gold test was run in every case I saw, because naturally in this condition we were very much interested and wanted to find out as much as we could about it, as well as the Wassermann test, using as much as 1 c. c. of the spinal fluid, and in each instance the test was negative.

A second remark made by Dr. Hauser is that in making a spinal puncture, if you find a clear fluid, it eliminates any possibility of an infectious meningitis. I do not think that statement is absolutely correct, because I can recall two cases, one especially, in a family which I saw in the country in which typical epidemic meningitis was present. There were two children, two brothers, very ill. I tapped the spine and gave them both serum, and the mother said her daughter was complaining; that she had just gone to bed for the first time. She had not been at any time in contact with the other cases. She only had a temperature of 99. She complained of headache. I tapped her spine and got absolutely clear fluid, under slight pressure. I advised that she be given some serum, as it would not do any harm, and the chances were she might be developing epidemic meningitis. The fluid gave a clear culture of the diplococcus of meningitis. We might find a clear fluid and not eliminate the possibility of an infectious condition.

There is a tremendous similarity between infantile paralysis or anterior poliomyelitis and encephalitis, both in the pathology and in the spinal fluid findings, and in the mode of transmission. I believe Dr. Park, of New York, is about ready to report certain results of private investigations which will tend to make the relationship even closer.

The main thing this paper suggests to us is the necessity of doing a spinal puncture when we are in doubt about any condition. I can remember when we first started at school the puncture of a vein was quite a tremendous procedure. I can recall, whenever it was given, five or six people were necessary to get into a vein. Today everybody is puncturing veins, and spinal puncture is going through the same phase. I hope it will not be abused, as I mentioned in the case of the puncture of the vein. I certainly believe there should be a great deal more spinal puncture done, and in that way we can get definite information.

With regard to the point Dr. Hauser brought out, of withdrawing fluid for therapeutic purposes, I have seen marvelous results following the withdrawal of fluid on a number of occasions, just simply and naturally due to the fact that pressure was relieved by reducing the amount of fluid. However, I have also seen cases in which that was not done improve likewise. It is simply mechanical relief temporarily, and I do not believe it is wise to persist in that too much, because you may abuse the tissues. You may produce shock that will be more detrimental than the shock produced by the pressure.

We had a discussion on the influence of the pressure, and I do not want to reopen that. In some cases I have seen wonderful relief afforded by the withdrawal of a little fluid. That should be carefully done. It should not be done too quickly or to a great extent. We can ordinarily in those cases where we have increased pressure and an increased amount of fluid take away 40 c. c. without trouble, but we should not be in too much of a hurry about it. We may tap, and if the fluid comes too fast the pressure should be gradually reduced. Every three or four seconds the drops will fall in normal cases. In some cases the pressure is so great that, as Dr. Crawford remarked yesterday in talking about a fracture case, he had to get out of the way in order to prevent being knocked down by the stream. I have never seen it quite that strong.

Dr. C. S. Holbrook, New Orleans: I agree with what Dr. Hauser said about the importance of the spinal fluid in the diagnosis of diseases of the brain. In lethargic encephalitis spinal fluid findings are of paramount importance. We have had a rather large experience of approximately 50 cases of this disease in the past two years. Often the diagnosis has rested upon the elimination of other conditions by examination of the spinal fluid, and we seldom make a diagnosis of lethargic encephalitis without the information that one can gain from a spinal fluid examination.

Our experience has been somewhat at variance with what Dr. Hauser reports, for positive findings in the spinal fluid have been present in a greater proportion of cases. The majority of our cases have shown an increase in cells from 10 and up to over 100 in a few cases. We had one case autopsied that showed 53 cells. Another case of typical lethargic encephalitis which came to autopsy did not show any increase in cells. Most of our cases have shown a slight increase in globulin, and this has been the most constant finding. In three cases coming to autopsy the globulin was increased in 2, and not increased in 1. The colloidal gold test has also been fairly constant in showing some degree of reduction. The Wassermann reaction in the cases were negative. One value of the spinal fluid examination is to rule out other conditions, a negative Wassermann and a low cell count will usually rule out syphilitic or tubercular meningitis.

Dr. G. H. Hauser, New Orleans (closing): I wish to thank Drs. Seemann and Holbrook for speaking of the condition of the spinal fluid in these cases. The experience of Dr. Holbrook is a little at variance with our own, and shows the necessity of further study of the spinal fluid from these cases. There has been some slight variation in the globulin, but to a smaller extent than the cell fluid, and much smaller in extent in the colloidal gold test. The principal point to be remembered is that in any case which is suggestive of this disease the spinal canal should be tapped as soon as possible and the fluid examined to rule out especially tubercular and syphilitic meningitis.

As to the remarks of Dr. Seemann of finding clear fluid in a case of cerebrospinal meningitis of the epidemic form, I would say that this is seen occasionally, and my remark was it would **probably** rule out this disease. It has been my experience in these cases that if the fluid is examined, even if it is clear, the polymorphonuclear cell count is usually increased.

I want to stress again the importance of making a lumbar puncture in all these cases where this disease is suspected, because the diagnosis in the final analysis depends on the ruling out of other diseases.

ECZEMATOID DERMATITIS DUE TO RINGWORM FUNGUS.*

By RALPH HOPKINS, M. D., New Orleans.

In 1908 Sabouraud demonstrated that the eczema marginatum of Hebra was due to a fungus growth which he named "epidermophyton inguinale." The eczema marginatum of Hebra has since more commonly been called "tinea cruris," or less properly "ringworm of the crural region." The epidermophyton inguinale was described by Sabouraud as being similar in some respect to the ordinary ringworm fungus, but differing in others both botanically and in its method of attack on the human skin, one point of difference being that the hairs were not invaded by the type of parasite infecting the crural region. Again in 1910 Sabouraud showed that the same epidermophyton inguinale was a very frequent cause of eczematoid conditions of the toes and feet. And since, the same fungus has been recognized as the causative factor in eczematoid patches in other locations on the body that present similar conditions of temperature and moisture.

The purpose of this paper is not to emphasize points in the diagnosis or treatment of ringworm of the crural region. Diagnosis is usually easy and treatment satisfactory. When, however, the epidermaphyton attacks unusual regions, the diagnosis is more difficult and failure to recognize the parasitic nature of the affection renders all treatment unavailing. Moreover, climatic conditions here are rather favorable to this special form of fungus growth which thrives best in regions warm and moist. In Ceylon, Castellani has observed that the Dhobie itch is often spontaneously cured on leaving the warm humid plains for the cool mountains, but that recurrence is likely on return to the plains. In Louisiana not many of us preserve dry skins in summer, and the same excessive perspiration that accounts for the relatively greater frequency of pompholyx on the hands and feet in this climate may also act as a predisposing cause for infection by the epidermophyton inguinale in regions that might escape in colder countries. In France, Sabouraud, out of a total of 26 cases of eczematoid affections of the toes observed during a period of a year and a half, found that 23 were caused by the epidermophyton inguinale and one by the ordinary ringworm parasite, and that only two were true eczemas not parasitic. Montgomery states that the incidence in California on the toes is not as great as recorded by Sabouraud in France, and attributes the difference to the cool climate of California. In our experience many eczematoid affections of the toes of long duration have yielded to anti-parasitic measures, and a great many cases that ten years ago would have been classed as intertrigo, or eczema, or pompholyx, or to maceration due to excessive sweating of the feet, are now regarded as being of parasitic origin.

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The regions, then, which are most under suspicion of epidermophyton infection are: the crural (left more particularly), axillary, cutaneous folds, such as that under the breasts of women, and last, but not of least importance, the interdigital spaces of the feet. Moisture seems an essential factor. More rarely the epidermophyton inguinale is found responsible for eczema, like dermatitis on the hands and even in other locations.

When the occurrence is on the feet or hands the appearance characteristic of epidermophytosis of the crural region is lost, and eczema or intertrigo may be so closely simulated that the proper diagnosis may be missed.

The interdigital folds between the toes seem to be the starting point on the feet in the majority of instances, though there may be, in rarer cases, a spread from these points over the dorsal and plantar surfaces even to the heel. The horny layer of the epidermis appears macerated or may be exfoliated, leaving a bright red surface; or, again, there may be a distinctly cheesy appearance. As the patch spreads, vesicles often form in the advancing border and become postular or rupture, with consequent exfoliation. The eruption is most active between the toes and the line of advance over the fore part of the foot is quite distinctly marginated and wavy. On the plantar aspect the affected part may be rough and corneous. The interdigital and flexion folds between the fourth and fifth toes are most often involved, and the infection may be unilateral.

Epidermophytosis of the toes is marked by its chronicity, there being but little chance of spontaneous recovery or of cure by any means which is not directed at destruction of the fungus. A case at present under treatment has a history of twenty years' duration. In this patient there is a clear history of infection of the toes from a crural tinea contracted in a gymnasium among whose attendants there was at the time an epidemic of ringworm of the crural region. In evidence of the efficacy of anti-parasitic treatment it may be mentioned that this case has almost entirely cleared up under treatment with salicylic and benzoic acid, in spite of the twenty years' duration.

Treatment advised by Sabouraud is the use of chrysarobin. The main reliance is placed on this drug in one per cent salve or stronger. More recently a combination of salicylic and benzoic acid in vaseline has been advocated. The latter treatment has been popularized in this country and is found to give excellent results.

In conclusion I would like to make the suggestion that the suspicion be entertained that a vegetable fungus may be the cause of eczema-like affections in other parts of the body than the crural region; that this suspicion be doubly strong when the interdigital folds of the toes are the parts affected; that in these cases the crural region be examined for tinea cruris or a history of tinea cruris; that microscopic search be made for the epidermophyton inguinale, and finally that salicylic acid and benzoic acid in vaseline be tried as a therapeutic measure. The astonishingly good results obtained will be found in the great majority of cases to warrant this procedure.

DISCUSSION.

Dr. H. E. Ménage, New Orleans: The subject taken up by Dr. Hopkins, I believe, should be of interest to the general practitioner. I have a degree of compassion for the general practitioner who tries the difficult task of making a diagnosis of skin diseases, but if he accepts a lesson and takes a gambling chance that whenever a male or a female comes to him with a skin disease of the feet or hands not try to label the disease, but examine the individual for the Epidermophyton Inguinale infection (Dobhie Itch, Eczema Marginatum of old text books) on the inner sides of the thighs, perineum, and buttocks, and if present, consider the hand and feet disease of that nature, he will correctly and successfully treat the case in probably no less than 75% of his attempts.

The Epidermophyton has been held responsible for such a variety of skin manifestations about the hands and feet (Ground Itch, Pompholyx, Eczemas, and even Hyperkeratoses) that the miscroscope naturally is the deciding factor. Dr. Hopkins has tried to make the diagnosis easy and practical for the general practitioner by establishing the nature of the diseases of the hands and feet by the presence of the groin infection. I will go a step further by saying that even in the absence of the groin infection I resort to the specific anti-parasitic treatment of diseases of the hands and feet and obtain far better results than in the past.

Salicylic Acid and Benzoic combination is the so-called preparatory treatment. The Whitfield formula is two grams of Salicylic Acid, four grams of Benzoic Acid and thirty grams of some vehicle. The skin is prepared thoroughly for five days, the ointment being well rubbed in. Sometimes these patients complain bitterly of a burning sensation. I have applied this particular ointment on the vulvae of women and on the scrotum of men without complaint, but when they do, the application of a little ice water relieves them at once. The reaction is almost always subjective and hardly ever objective, such as redness, blistering and the like. Many cases will appear well and apparently cured from this first treatment, but will relapse after a short time if the treatment is not kept up or if not followed by the use of Chrysarobin in five or ten per cent strength. Formerly we were very much concerned on account of the great amount of reaction from it, but now I do not hesitate to rub in a ten per cent ointment when I think it necessary.

I always warn the patient about the reaction, so that he will not worry. The reaction is not as a rule painful. The moment the reaction is noticed, the treatment should be stopped and bland applications made.

Dr. J. N. Roussel, New Orleans: Before we use the Whitfield ointment on all of our patients indiscriminately, we should use it on ourselves once or twice, and then I am sure we would not use it on some of them. I prefer Chrysarobin. I use two, never over four per cent every three days, and that usually does the work.

I want to say a word as to what I believe to be the mode of transmission of the Epidermophyton. I am firmly convinced that the organism is transmitted in new clothes—new underwear. I think probably the organisms come directly from the cotton fields. It is not, therefore, necessary that the primary lesion be in the groin. It may be on any part of the body. I have seen it primarily on the feet, axillae and various other places.

A PLEA FOR MORE CAREFUL EXAMINATION AS A MEANS LEADING TO A MORE ACCURATE DIAGNOSIS.*

By J. E. KNIGHTON, M. D., Shreveport.

In discussing this subject I do not propose to tell you something that you do not know already, but it has occurred to me that it may not be without profit to us all to ask ourselves the question: Are we in all cases giving our patients the careful, painstaking, conscientious examinations that they are entitled to receive at our hands, and that we, as scientific medical men, should feel obligated to give?

Far too frequently do we see patients who have passed through the hands of several physicians each of whom has made a different diagnosis and not one of whom has really made a thorough examination. The effect of such an experience on the patient's mind is obvious, and we need not be surprised to learn that his confidence in the profession has been shattered and to see him seeking relief at the hands of irregular practitioners or becoming a victim of the patent medicine evil.

A mistake that is frequently made is regarding certain symptoms as a result of some previous illness that has no relation whatever to the present condition. Perhaps malaria and syphilis are the two diseases that are most sinned against, in that they are held responsible for many symptoms for which they are in no way responsible. It is also very convenient since the epidemic of the past two years to tell the patient that his symptoms are due to the after effects of influenza. This probably satisfies the patient and costs the doctor very little effort.

To cite an example illustrating the above statements, I will mention a case that came under my observation a few months ago: Patient complained of diarrhea which had given trouble for several months. He gave history of having syphilis twelve years previously, for which vigorous and repeated treatments had been given. His disorder was charged up to syphilis, and more anti-syphilitic treatment given, notwithstanding the fact that repeated negative Wassermann tests were made. A proper examination, including the use of the X-ray and other laboratory tests, gave a diagnosis of partial stricture of the colon, due to tuberculosis, which was corroborated by laparotomy. In addition to involvement of the colon, there were small tubercules scattered throughout the peritoneal cavity, and enlargement of mesenteric glands, specimens of which were examined by pathologist and reported to be tubercular.

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It may be said that in cases such as the above, there may be some excuse for error; but the most inexcusable error, and one that is most fatal to the patient's chances of recovery, is the diagnosis of pulmonary tubercular cases as chronic malaria and treating them as such over long periods, and until the disease has become so far advanced that recovery cannot be hoped for. Several such cases have come under my observation during the past few years.

There is but one way to avoid errors in diagnosis, and that is by adopting a systematic routine method of procedure and following this line in the examination of every patient. If this is followed out faithfully in every case, it soon becomes natural to begin every examination in the same way and the different steps follow in the order that you have trained yourself to approach them, and nothing will be overlooked. It matters not what type of stethoscope you use, nor what method of percussion you adopt, if you will continue to use the same instrument and the same method until they become your own. It is in this way only that dependable conclusion can be reached.

The routine formula to be followed in the examination of every patient should consist of the following:

I. *A Careful and Intelligent History.*—This should include family history, personal history of previous illnesses, and history of present illness. In securing this history, an effort should be made to properly interpret the symptoms of present complaint, and also to properly relate them to previous illnesses.

II. *Physical Examination.*—This should begin as the patient walks into your examination room, noting the facial expression, gait, manner of greeting, and physical bearing in general. We then proceed with investigation of the skin, the eyes, the nose, the throat, mouth and teeth, the glandular system, and the reflexes.

We would next examine the chest, and it is here that the real science of physical diagnosis has its greatest opportunity. The general outlines of the chest should be taken into consideration. We may be dealing with an asymmetrical chest, which suggests rickets in early life, or a chest of the long type with its narrow subxiphoid angle and with all its predisposing tendencies to visceraptosis. The condition of the heart, lungs and pleura should be determined by inspection, palpation, percussion and auscultation. Every abdomen should be studied as an individual problem. Is the abdomen distended, flat or retracted? Is muscular rigidity, localized or general, present? Is hepatic or splenic enlargement demonstrable by percussion or palpation? Are the kidneys palpable? Is pain or soreness elicited by touch or pressure? If so, is the pain located at point of pressure, or is it referred to some distant point? Are tumors or inflammatory masses palpable? Are they fixed in position, or are they movable? All of these and yet others are pertinent questions regarding the examination of the abdomen. Pelvic and proctologic examinations, of course, should be made when indicated.

III. *Routine Laboratory Examinations.*—They should usually consist of at least chemical and microscopic examination of the urine, and red and white and differential blood counts.

IV. *Special Laboratory Examinations.*—These are to be such as the nature of the case may require, such as examinations of sputum, stomach contents, feces, exudates, Wassermann, and the various X-ray examinations. Much valuable information is lost by the careless disposal of specimens which have not been properly examined and studied. The following will illustrate the importance of making proper examinations of all specimens: A patient who had typhoid fever fourteen years ago, and had had repeated attacks of gall-bladder trouble since that time, gave a pure culture of typhoid bacilli from bile withdrawn by means of the duodenal tube.

On examination of specimen from another case of cholecystitis secured by duodenal drainage, the smear was simply swarming with lambia intestinalis. This patient had lived in Louisiana all her life.

In closing this paper I want to appeal to the physicians in the rural communities, the villages and the smaller towns, as well as in the larger centers, to co-operate with each other in order that we may do a class of work commensurate with the dignity and greatness of our noble profession.

DISCUSSION.

Dr. A. A. Herold, Shreveport: I think we all agree heartily with Dr. Knighton in his statement that a great many diagnoses are made through error or from haphazard examinations and carelessness.

There is one class of cases which he did not call attention to, and which I wish to mention. I refer to the neurological cases. In such cases the diagnosis is not infrequently overlooked. Only yesterday a patient came under my observation who had made the rounds of different physicians and had received various diagnoses. One diagnosis was that the patient had a vesical valculus. Another one treated him for hyperacidity of the stomach; another one decided that he had a spinal tumor, whereas as a matter of fact he had an advanced case of tabes dorsalis and showed that the crises had been overlooked. We cannot be too careful in laying stress on getting a history and making an examination from a neurological standpoint.

Dr. H. P. Jones, New Orleans: I believe the great trouble with the average physician is that he feels specialists have some God-given power, some keenness of insight which the average physician does not have. But, as Dr. Knighton has brought out, the trouble is that most errors are the result of either laziness or carelessness on the part of the practitioner. There is not a man in this room who could not find out in 95 per cent of the cases what is the matter with the patient if he would take the trouble to do so. It is not necessary always to have all of the laboratory equipment that is found in well-equipped hospitals. It is unnecessary to make a chemical examination of the blood to find out the extent and nature of kidney trouble, and it is a very great mistake for physicians to feel that they cannot do everything they read or hear about. If they will make a systematic and personal examination of the case, in the great majority of cases they will make a diagnosis just as correctly as one that can be made by the most elaborate laboratory paraphernalia and apparatus.

Dr. W. J. Durel, New Orleans: I did not hear all of the Doctor's paper. One diagnostic aid with me is tuberculin. The Doctor mentioned everything, even the Wassermann, but he overlooked referring to the use of tuberculin. If any disease is prevalent it is generally considered tuberculosis, and if any disease is not always diagnosed there may be a suspicion that it is tuberculosis. I am glad to see that modern literature has recognized the fact that tuberculin will clear up doubtful cases. The cutaneous test denotes infection, and the subcutaneous test denotes activity.

Dr. T. E. Wright, Monroe: This strong appeal for a more careful and painstaking diagnosis most certainly should result in much good. We have entirely too many men scattered over the country, and doubtless a substantial percentage of city men, who rely entirely too much upon intuition for diagnosis. The expression, "I have a hunch it's typhoid fever," doesn't mean much unless backed up with clinical findings, history, and the laboratory. The type of man who makes snapshot diagnoses also writes shotgun prescriptions. It is not by any means too laborious for a general practitioner to establish some sort of a general routine, modifying, readjusting and improving this routine from time to time, to the end that he gives to the patient at least part of that to which he is entitled. Unfortunately, many men are growing careless, as they get older, in the use of their stethoscopes. I shall never forget a little party held in this room by the graduating class of 1909; thrown on a screen were the final goodbye injunctions of the different professors. Among the many good ones was one by Dr. Halsey: "For God's sake, don't forget your stethoscopes."

Dr. George S. Bel, New Orleans: I did not expect to be called upon to take part in this discussion. I realize that Dr. Knighton has put before us a very elaborate subject, and it is a physical impossibility for any individual to cover that subject in toto, and we all feel that his paper will stimulate us to take more careful and painstaking histories of our cases, as well as to be more thorough in our physical examinations. We know that a superficial examination is detrimental to one's reputation.

Dr. A. L. Levin, New Orleans: I want to stress one important point. We should not be carried away too far by a history of influenza. In my experience since the last epidemic, influenza plays a very important part in gastro-intestinal disturbance. I have seen more gastro-intestinal cases following the last epidemic than in the years previous. The explanation for it is probably, as Dr. Lyons mentioned in his report, that the swallowing of infected sputum causes duodenitis. He has seen a number of cases where infection of the biliary tract followed the same infection.

There is probably another explanation for it. We know that the organism or toxemia causes a tremendous shock to the nervous system, the weakening of the nervous system causes a change in some way in the gastro-intestinal secretions.

Another point of interest which Dr. Herold has mentioned is the importance of not overlooking a gastric crises of tabes. I have laid stress on that subject in a paper of mine several years ago; we infrequently overlook the early stage of tabes. We are called in to see a case of vomiting, and we take it for granted that we are dealing with an acute indigestion. The physician should not fail to examine the knee reflexes and the pupils. Cases of that type have a loss of knee reflexes, one pupil larger than the other, or the typical Argyll-Robertson pupil. Such evidence should put the physician on the alert and he should suspect gastric crisis of tabes.

Dr. A. C. King, New Orleans: Yesterday, in discussing gall-bladder conditions, one of the gentlemen present called attention to the fact that the teeth had a good deal to do with gall-bladder trouble, and he had traced two or three cases to the mouth. That recalls to my mind the importance of the prostate gland in obscure cases. Here is a case in point: A patient had been ill for quite a long time and made the rounds of various physicians. He had his teeth examined, and those that were diseased were taken out and plates put in. In short, he had several things done. At the time he came to me I examined his gall-bladder and he imagined he had cholecystitis, or stones. He would not consent to have an operation performed, and finally fell into the hands of a man who could make a REAL diagnosis; this man examined his prostate gland, and, in doing so, the patient nearly jumped off the table. He then sent him to a genito-urinary specialist, who massaged his prostate repeatedly, and in a few weeks this man gained twenty pounds in weight and was in perfect health. This case taught me a lesson as to how much trouble the prostate gland could give in a particular case. The patient got well; he is a professional man, and a good many of you know him. The lesson I learned from this case was that it is always wise to examine a patient from head to foot. If you suspect gall-bladder trouble, examine the teeth. You should examine the gall-bladder, the prostate gland, and so on down the line.

Dr. J. E. Knighton, Shreveport (closing): It was not the intention of the paper to cover every phase of an examination, from the simple fact it was practically impossible to do that in the space of fifteen minutes. Furthermore, it is not necessary. The object of the paper was to call attention to the fact that so many of us are making careless examinations.

BRONCHIECTASIS.*

By DR. GEO. S. BEL, New Orleans, La.

In my long clinical experience I have been led to believe that much written on this condition does not coincide with the true morbid anatomy. We all have the idea firmly embedded that bronchiectasis is a very common condition occurring in a great variety of pathological states, and is a true dilatation of the wall of one or more bronchial tubes. The term "bronchiectasis," which literally means a dilatation of a bronchus or bronchi, as understood by the clinician, is, in my opinion, too loosely employed. I have been impressed at the post-mortem table with the infrequency of dilated bronchi where there is no thickening of the wall and the opposite condition, namely, a narrowing of the bronchial tubes where these walls were thickened. Undoubtedly, a number of pathological conditions of the bronchial tubes are included under this term. For example, the tube that is thickened and, in consequence, narrowed as a result of this thickening, gives rise to the symptom complex that we have for true bronchiectasis. Like many other terms such as Hodgkin's disease, Addison's disease, cirrhosis, etc., cover a greater field than the literal meaning permits. Addison's and Hodgkin's diseases were intended to express distinct entities of the adrenals and lymph glands respectively; we know that a variety of conditions of these glands give rise to the pictures described by Addison and Hodgkin, though the original term is still adhered to. In other words, these terms used to describe a specific clinical condition are now employed in a composite sense; so it is with the clinical entity "bronchiectasis." The morbid anatomist commonly meets with a condition of the bronchial tubes that does not conform in the strict sense to the term "bronchiectasis," where the history of the case speaks conclusively of a bronchiectasis.

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*Read before the Louisiana State Medical Society, April 19 to 21, 1921.

The impression extant is that bronchiectasis is a condition in which the tubes are enormously dilated, the tissues composing the wall remaining intact, which might be likened to the "ballooning" out of a rubber tube by pressure from within. These dilatations are described as fusiform or cylindrical and saccular. The fusiform type is one in which there is considerable length of the tube involved, while the saccular is the reverse. In the latter, the dilatations are described as ranging from the size of a bean to that of a walnut.

It is claimed by the clinician and Roentgenologist that bronchiectasis can be detected even in its early stage. Now, while I do not question that the Roentgenologist can detect it where the tubes are thickened, I, as a clinician, must admit I know of no physical signs that are diagnostic of bronchiectasis of the ordinary type referred to in our standard texts. A patient may, over a long period of time, manifest many of the signs and symptoms which lead to a diagnosis of bronchial tube dilatation, and, from the study of the morbid anatomy, reveal that the tubes are not dilated, but greatly thickened and narrowed. In other words, the pathology is that of chronic bronchitis.

The mistake made is the result of too little attention to the study of the microscopic morbid anatomy. Not only is this true of this condition, but for many others. If I may be permitted to sound a note of warning, I will state that the general practitioner does not devote sufficient time to the study of pathological conditions under his observation, which, after all, is the only confirmatory evidence. If the clinician would follow these cases to autopsy and make a careful study of both the gross and microscopic findings, much existing confusion and diversity of opinion would be clarified. Of course, where you have the sacculated bronchiectasis the size of walnuts, they are readily detected, but these I regard as true cavities. I realize that all cavities, no matter how small, communicate with bronchi; therefore, in this sense, we are dealing with bronchiectasis.

The so-called bronchiectasis always means disease of the bronchial tubes; this disease may have begun in the tube or may have started outside and extended into the bronchial tubes. In both instances it occasions a bronchitis. Therefore, we might say that all bronchiectasis has as its forerunner a bronchitis.

Whether the disease of the tube is an acute or chronic inflammation, there is bound to result primarily more or less narrowing of the bronchial tubes. In the case of an acute inflammation, this narrowing is produced by a swelling of the inner lining, due to inflammatory exudate. Coincidentally with the narrowing, the tube wall is, in consequence, thickened. This thickening of the bronchial tube walls creates an optical illusion when viewed at the autopsy table, for the reason that such tubes stand out prominently and are in marked contrast to the adjacent normal bronchial tubes of the same caliber.

On the other hand, if the inflammation is a chronic one, and is secondary through extension into the bronchial tubes from the peri-tubular tissues, a narrowing of the lumen with a thickening of the wall occurs.

The above two conditions give rise to the so-called fusiform or cylindrical bronchiectasis, and is seen in various lobular pneumonias and especially in tuberculosis. In this connection, I want to say that such a bronchiectasis is not a dilatation, but a thickening of the bronchial tubes, and as a matter of fact the lumen is of smaller diameter than that of the normal tube.

Where the diseased tubes are chronically inflamed, the newly formed tissue in and about the tubes undergoes degeneration to such an extent that the tube-wall is destroyed. This is particularly true in tuberculosis. Following such a degeneration there is liquefaction and loss through digestive action. The degenerated tissue which has formed a pseudo tube wall falls away and escapes in the form of expectoration through the tube that leads into the area, and this now occasions a marked increase in the diameter of the tube at this point. The extent of the increase in calibration is dependent upon the extent of the liquefaction of the degenerated newly formed tissues. As a result we now have what seems to be a greatly dilated tube, but in reality such is not the case, since there is no tube wall present. Such a condition probably explains the walnut-sized saccular bronchiectasis referred to in standard texts. I regard such a hole as a CAVITY, which, of course, communicates with a bronchus.

As already stated, bronchiectasis is invariably associated with disease. As a rule, the disease extends into the lung tissue proper and in the form of a lobular pneumonia. When the bronchiectasis is preceded by a disease of the bronchial tubes, there is certain to follow a peribronchial inflammation which gives us more or less consolidation of the adjacent lung parenchyma. This consolidation of the peribronchial tissues always forms a part of the bronchiectatic wall. Microscopically, the examination of the wall of the so-called saccular bronchiectasis reveals no bronchial tube tissue, but peribronchial and lung tissue proper. There is no epithelium lining the inside of such a sacculation, although to the naked eye the inner coat appears smooth, as though it were a continuation of the mucosa of the bronchus. I would say the rule is to find the inner side of the so-called bronchiectasis rough and granular, which is in itself gross evidence of a loss of the normal tissues of a bronchial wall.

At autopsy the ordinary fusiform bronchiectasis of the clinician is often seen as a tube or tubes which are greatly thickened (chronic bronchitis) and their lumens usually narrowed, the thickened tubes being uniform rather than sacculated. The narrowing of the lumen is naturally to be expected, since the thickening is the result of reparatory connective tissue, new growth, which contracts in keeping with all scar tissue.

Do we frequently see bronchiectasis in empyema or asthma? In these two pathological conditions the cause is mechanical interference with the intake and output of air, causing an extreme dilatation of the air sacs, sometimes to such an extent as to produce rupture, but no dilatation of the bronchi. Certainly, if pressure from within the tubes were to be regarded as a cause for permanent dilatation, we would expect to find it most marked in these two conditions.

In bronchiectasis there is always a diseased bronchial tube, and on the extent of the disease will depend whether the pseudo-dilatation is saccular or fusiform. In all bronchiectasis there is a disease of the bronchial tubes, with loss of substance; the apparent dilatation is the result of loss of substance. In tuberculosis is seen more frequently the so-called bronchiectasis, which in reality is early CAVITY FORMATION. It is well known that all cavities in tuberculosis communicate with a bronchus, and were this not the fact we would never have a cavity. All lobular pneumonias, no matter what the etiology, begin as inflammation of the bronchi, and from here extend to the lung tissue, and these inflammations subsequently lead to more or less thickening of the bronchi, and can in some sense be regarded as bronchiectasis. It is not possible, however, to detect clinically that you have a separate morbid condition of the tubes.

I believe that many so-called bronchial sacculations are in reality destroyed lung areas, such as abscess, gangrene, or true cavities. I further believe that many tuberculous cavities are mistaken for sacculated bronchiectasis.

The symptoms of bronchiectasis differ very much in different cases, and are frequently those of the associated disease, and in some cases may be entirely absent. As a rule, one of the earliest symptoms is cough with expectoration; at first the cough may not be severe and expectoration slight, but as the disease advances the cough increases with the amount of sputum, until at last very large quantities—a pint or more—may be expectorated in twenty-four hours. The manner of coughing is often characteristic; the patient will not expectorate for some hours, and then, perhaps after some movement which disturbs the contents of the tubes, he will begin to cough and, with more or less violent paroxysms, will bring up several ounces.

Physical signs, like the symptoms, vary in different cases, and no special sign can be said to be pathognomonic of the disease, and the previously described pathological conditions which may be associated with bronchiectasis readily explain the reasons; therefore, I will not attempt to give a detailed description.

The X-ray, according to Alexander B. Moore, of Rochester, Minn., usually differentiates bronchiectasis without difficulty from abscess of the lung by its location and the fact that the walls of its cavity are relatively thin and small. These cavities are multiple and there is absence of a fluid level within them.

It is universally stated that bronchiectasis may be differentiated from abscess of the lung by the fact that in abscess the sputum shows elastic fibres and has a foul odor. Also in abscess there is evidence of general infection and signs of local cavity formation. In my opinion, I cannot see how the presence of elastic fibres in the material expectorated has any differential value, since these may be found as frequently in one condition as in another. Any morbid change in the lungs associated with degeneration may of necessity yield elastic fibres in the sputum. In abscess, gangrene and cavity formation there is more or less degeneration of tissues; therefore, elastic fibres are to be expectd in the sputum.

With regard to the foul odor as a differential point, this may also be noticed in any material expectorated. Obnoxious odors are always indicative of putrefaction, which can only be produced by saprophytic, proteolysing micro-organisms acting upon dead organic matter. Since we have in the lungs such organisms because of the direct relation of the lungs to the outside world, putrefaction is more likely than in any other part of the body. The intensity of the odor depends upon the degree of putrefaction, and the degree of putrefaction depends upon the amount of degeneration.

With regard to the sign of general infection as differential for abscess of the lung, there may be something in this sign; however, the general infection is not always present in lung abscess.

In conclusion, let me state that I recognize fusiform or cylindrical bronchiectasis, which is common in pulmonary tuberculosis.

The so-called sacculated form of bronchiectasis, I believe, is nothing more than true cavity formation, and in no sense a purely dilated bronchial tube; and, furthermore, if they do exist as a dilated tube, there must be very few cases, as we never find them at the postmortem in the Charity Hospital of New Orleans.

DISCUSSION.

Dr. J. B. Guthrie, New Orleans: The picture of bronchiectasis is a very definite one, from a clinical standpoint. Naturally we have to exclude cavities of tubercular origin and in considering the subject we want to think of the word "bronchiectasis" as meaning a dilatation.

In the chronic cases we should bear in mind bronchial thickening, the retention of air inspired, and a forcible expiratory effort will dilate the tube behind. The thickening of the tube is there in all these chronic cases of bronchitis, and we have an occlusion existing, a partial retention, an effort to bring about expulsion of the air, and the tube must dilate. That is the story of every single tube we have. There is a narrowing of the lumen, and the effort to penetrate that lumen brings about a dilatation. Clinically, we are in the habit of considering bronchiectasis when we have a lesion at the base associated with a large amount of sputum, and when it is emptied out periodically it must come from a cavity somewhere. It is perfectly impossible to think of as much as a pint of sputum coming from the system of capillary tube or tubes approaching the capillaries in point of size, the patient being able to live through that period and accumulating sufficient fluid to empty itself again perceptibly. These cases are usually associated with some changes. Stress is laid on the thickening of the finger tips, and clubbing of the fingers in the older cases. We have overlooked some of these cases in the hospital.

Two months ago I had a conversation over the autopsy table with Dr. Duval regarding the statistics in other hospitals, and why it was that we as clinicians were seeing these cases of true bronchiectasis in such few numbers as compared with clinicians elsewhere. He gave me the explanation that we have here a thickening of the bronchial tube, and he maintained, as Dr. Bel maintained, that we have no dilatation, but a narrowing of the lumen. It seems to me a narrowing of the lumen means that somewhere in the course of that bronchus there is dilatation. I cannot get away from the notion that there must be a place for the large amount of sputum which we see poured out intermittently. These cases require diagnosis. If they are not diagnosed, and if we do not get them and resort to surgical drainage, there is absolutely no hope for them. They will never get well. We have got to empty the sputum. Sometimes we resort to one means and another to get rid of the sputum. But those cavities require emptying. The Trendelenburg position sometimes is necessary in these cases, and various types of medication may have to be resorted to which will liquify the secretions. Such medication will help very materially.

Dr. J. W. Durel, New Orleans: This is a very interesting and timely paper. Dr. Bel said that the Charity Hospital autopsies did not show bronchiectasis, but in the tubercular ward of the hospital in the last eight years we have had 28 cases referred to us as tuberculosis which were cases of bronchiectasis.

I agree with Dr. Bel that bronchiectasis is not necessarily associated with a peculiar dilatation of the bronchus. As has been shown by Hammond, Brown, and Baldwin, there may be a true bronchiectasis and yet you do not detect dilatation of the bronchi after death, because these cases of pure bronchiectasis occur for the reason stated—that in bronchiectasis there is always a thickening of the bronchial mucous membrane and tissues. You must remember that during inspiration you have negative pressure in the lung. With expiration there is positive pressure in the lung. These are constricted bronchi. You have a very positive pressure practically always existing in the lung. A bronchiectatic case that constantly coughs has a strong positive air pressure in the lung.

I would like to see brought out his diagnosis of the fact that this condition is being recognized in the clinic. When you stop to think that reports from institutions all over the world show that from ten to fifteen per cent of tuberculosis institutions have admitted patients as cases of tuberculosis that were simply cases of bronchiectasis, it behooves us to be more careful in our diagnosis.

One point I have always made and help my class to watch for, is: that a profuse expectoration is constantly negative with lesions at the base, and I do not classify it as tuberculosis until I have satisfied myself of the presence of a tuberculosis infection, not only at the point of invasion, but in other parts of the lung by the presence of tubercle bacilli in the sputum. Not until you get tubercle bacilli in the sputum are you justified in classifying a bronchiectatic cavity as tuberculous.

I was present at a meeting of the National Tuberculosis Association in which the subject was discussed of the differentiation between bronchiectasis and tuberculous cavities.

Dr. Elliott, of Toronto, laid special emphasis upon club fingers. This was about five or six years ago. I did not pay much attention to it at that time, but on further observation I have been surprised to see the number of bronchiectatic cases showing club fingers. I agree with Dr. Bel that bronchiectasis is nothing but a cavity. There may be the presence of a cavity in an individual at the base. The presence of a cavity in the lung of an individual who showed no symptoms of toxemia, who is well fed, who has not lost weight, who has shown profuse expectoration negative, you are safe in making a diagnosis of bronchiectasis.

Dr. A. Henriques, New Orleans: I have listened with a great deal of interest to this very scientific paper of Dr. Bel, and I think, so far as I can gather from his statement, that in bronchiectasis we are dealing not with the dilatation of a bronchial tube, but with a degenerative ball of the bronchus and with a true cavity. I do not believe that we can contradict the teaching of pathology in this connection. We can with the Roentgen ray recognize special thickness of the bronchial tubes, and we can recognize cavities which are frequently overlooked, especially if the cavities are not large, and if they are situated several inches from the surface. The work of Moore, of the Mayo Clinic, the work of Weitzner, of the Mount Sinai Hospital, New York, has furnished us considerable information with regard to the detection of these cavities, and I do not think we should look for clubbing of fingers as a means of diagnosis of a cavity in the lung, nor do I think we should depend upon indirect signs when we can with a careful physical examination supplemented by the X-ray recognize a cavity where it exists.

Dr. George S. Bel, New Orleans (closing): I will answer Dr. Durel first. His explanation and his idea of bronchiectasis are thoroughly in accord with what I said. There seems to me a misinterpretation about the pathological description. It evidently has not been absorbed by some one. Dr. Durel's idea is correct, and I thoroughly agree with what he has said and did not deviate from that view.

Dr. Henriques' idea is absolutely, pathologically and scientifically correct; but how my friend, Dr. Guthrie, can advocate surgical procedures to remove a large quantity of pus and keep in contact with the bronchial tube is beyond all scientific comprehension. I know that nitrogen gas is introduced to compress the tube, but in the name of pathology and morbid anatomy, how can you conceive of a man having a pint of blood coming out through a hole in his chest when there will be more pus in his tube or somewhere else? It must be some job to get it out. I have had at least a dozen anatomists tell me that for the wall of a bronchus to remain intact when there is all that pathology present, is impossible. It is never heard of, and has never been seen.

I want to illustrate as clearly as I can by drawings on the blackboard what I mean. Here (indicating) is a bronchial tube which is microscopical. We have here (indicating) a sacculated dilatation. If we have an acute bronchitis to deal with, we have an inflammation. We cannot have inflammation without exudation in the lung. We are bound to have narrowing. You talk about a man spitting up a pint of pus and of having a surgeon go in and evacuate that pus. That must be some hole. (Laughter.) I said it was a cavity, and in my paper I pointed out that this tube in here (indicating) was eroded or degenerated. All these inflammatory processes to undergo degeneration, and this degeneration had to be watched to be eliminated. Where does it come from? It is too absolutely absurd to talk about.

What becomes of all that material? After fermentation takes place it becomes liquified and is expectorated. And it is some hole. That is a lobular pneumonia and bronchitis. In a case of tuberculosis you do not have lobular pneumonia. It is impossible to have physical signs without a lobular pneumonia. You talk about peribronchial thickening. You cannot have a hole the size of a walnut, as laid down in the text-books, with bronchial breathing, with pectoriloquy. You cannot get a tympanitic note without a large quantity of air being present. Here is your bronchial tube (indicating) whether you have air sacs or not. When it balloons out, what becomes of the air sacs. They must be pressed open and all nutrition is taken out. You have lobular pneumonia and all the pathology follows.

I cannot agree with my colleague, Dr. Guthrie, in what he has said, but I do agree with Dr. Durel. He did not find dilated bronchi in the postmortem room. I said the bronchus is gone, but the cavity is there. They are not bronchiectatic cavities. There is no more wall to the cavity. The wall is gone, and was expectorated perhaps six months ago. Dr. Guthrie is talking about a sacculated dilatation which anatomically, pathologically and histologically does not exist.

MUNICIPAL REFUSE COLLECTION AND DISPOSAL.*

By DR. H. R. CROHURST, Washington, D. C.

The collection and proper disposal of the materials discarded as waste by the members of a community is a problem that the municipal officials are called upon, sooner or later, to solve satisfactorily. With the increase in density of population from year to year and the growth of suburban districts into urban communities, a closer study, greater thought and more earnest consideration are demanded to work out the proper solution of this essentially municipal problem.

The question of proper refuse collection and disposal is one closely allied to the health of the community. Aside from the nuisance arising from unpleasant and objectionable odors given off from decaying organic matter when stored at the point of production awaiting collection, or at the point of ultimate disposal, there are to be considered the questions of the production of flies in the vicinity of habitation, with liability of increase in fly-borne diseases and the supply of food for the rodent population in areas where the spread of plague is an important consideration

Local conditions existing in different communities are so varied that the collection and disposal of municipal refuse must be taken up and studied separately for each locality by itself. The application of data secured from municipalities where systems of collection and disposal are in operation are not always satisfactory. Data from municipal reports are sometimes misleading, costs are not figured on the same basis, and it is rarely stated what items are included in arriving at cost figures. In the studies of collection and disposal of municipal wastes, conditions to be met vary with the type of habitation, class of population, character of industries, climate, geographical location, topography, condition of streets and alleys, and such variation must be taken into account when applying data derived from other communities.

The cost of operating the waste disposal system is of the greatest practical consideration, but the effort to reduce the cost should not be carried so far as to sacrifice sanitary methods. The proper method of collection and disposal of wastes for a given community cannot be determined by any fixed rule. The object to be obtained is an efficient method of collection and disposal in a sanitary manner and at a reasonble cost for all classes of wastes. It can be definitely stated, however, that no method of utilizing municipal waste has as yet been developed that will cover both the cost of collection and disposal. Certain methods may be made to meet some of the expenses of disposal, but in every instance the combined cost of collection and disposal will represent an expenditure of funds on the part of the municipality that must be provided for in the budget of expenses.

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Character of Wastes.—Municipal wastes may be divided into ashes, garbage, rubbish and street sweepings.

Ashes consist of the material discarded after the combustion of coal or other fuels in household heating and cooking devices or under the boilers of manufacturing plants. Ashes are usually free from organic matter, unless foreign materials have been mixed with them. In Northern communities where coal is the chief source of fuel, there may be found a considerable percentage of unburned coal in the ashes. In cities where wood is the chief fuel used and where weather conditions are less severe, the amount of combustible matter in ashes and the unit production will be less.

Garbage consists of the waste material from household, hotel or restaurant kitchens, and the animal and vegetable wastes from groceries, markets and similar establishments. Included in its composition are compounds which undergo putrefaction almost immediately, and unless garbage is removed regularly and frequently, conditions of a distinctly insanitary nature will develop at the point of storage. Because of its composition, garbage is one of the most important of the municipal wastes, and its removal and proper disposition present the greatest difficulty. Garbage varies with the seasons of the year, with the location of the community producing it, and in different districts of the same municipality. The character of the population has a marked effect both on the quantity and quality of the garbage produced. The greatest production occurs in the summer months and early fall, the minimum amount in winter. The average yearly per capita production of garbage is approximately 150 pounds. Garbage contains the most valuable properties of any of the municipal wastes. Grease may be recovered by reduction, and the remaining residue worked up into fertilizer or into feed for animals. Garbage without any treatment has some direct fertilizing value when applied to land. Fresh garbage, mixed with inedible or poisonous material, can be fed to animals.

Rubbish consists of the portion of household wastes that cannot be included under ashes or garbage. The mixture is of a non-putrescible, combustible nature, and includes paper, wood, glass, crockery, metals, leather, rags and other discarded household material. In some cities rubbish is sorted, a portion sold, and the remainder, consisting of a large proportion of combustible matter, burned to furnish power for operating plant machinery, lights, and some plants are able to supply outside sources with steam.

Street sweepings consist of the material, in the form of dust, worn from road surfaces by the abrasive action of traffic passing over them, horse droppings and a mixture of other materials, matches, paper, fruit skins and miscellaneous material thrown upon the streets. In the fall the quantity of this waste may be very materially increased by leaves in these sections laid out with shade trees.

Methods of Collection.—Of the four classes of municipal wastes, the street sweepings are usually collected separately with special equipment, and in the majority of cases by city forces. Street sweepings usually do not contain sufficient putrescible matter to preclude their use in filling low areas. The finely divided material in the mixture may give rise to objectionable conditions from dust in the vicinity of the point of disposal.

Ashes, garbage and rubbish may be collected separately, in various combinations or all together. The choice of the collection system, separate or combined, depends upon the method of final disposal. Many of the larger cities collect garbage, ashes and rubbish separately. Garbage is disposed of by reduction, or feeding to animals, the ashes used in fills and the rubbish sorted for the recovery of saleable material and the remainder burned. In some cities rubbish contains sufficient saleable material to show a credit over the cost of separation, while in others the cost of sorting would not be paid by the sale of the materials recovered. In smaller communities where reduction would not be feasible because of the small quantity of garbage, considerable revenue has been obtained by separating this material and feeding it to hogs. The ashes and rubbish are collected together or separately, and used in fills. This system of separation can be used with nearly all methods of disposal. Where ashes are collected separately and garbage and rubbish combined, the method selected for disposal is incineration for the combined wastes, and the ashes are used in fills. For combined collections of the three classes of wastes, final disposal is by dumping in fills or by incineration. Considerable difference of opinion exists as to the best method of collection, but local conditions should be made the deciding factor in determining the best method for any locality.

For the proper and efficient collection and disposal of municipal wastes there should be provided a sufficient appropriation for carrying on the work effectively, rules and regulations by the municipality covering the separation of wastes, type of receptacle to be used, location, time of collections, frequency of collection, and efficient organization to carry out the work in a sanitary and economical manner, and means of educating the public to secure its best co-operation. It is beginning to be the concensus of opinion that municipal collection is more satisfactory and economical than collections by contract. The collection organization under city control is more flexible and better able to meet changing conditions than is the organization under a contractor where certain definite requirements and equipment have to be specified. Under city control the organization is built up looking toward future changes in conditions. With short-time contracts the price paid must either be excessive to cover the cost of the investment for equipment or the equipment supplied will be exceedingly poor. The city has the necessary legal authority to enforce regulations which is lacking on the part of the contractor. The cost of collection is so affected by the many local conditions that any attempt to compare the economy of systems is exceedingly unsatisfactory.

Methods of Disposal.—The methods of refuse disposal consist of dumping into water, dumping on land for fills, and incineration, applicable to all classes of wastes; burial, applicable to garbage and street sweepings; feeding and reduction, applicable to garbage only.

Dumping in Water.—For the larger seaboard cities dumping into water offers one method of refuse disposal. In theory, the principle is to have a body of water sufficiently large to dilute soluble matter, allow the heavier particles to settle, and provide sufficient surface so that floating material is scattered. Unless material is transported long distances off shore, tidal currents and wind bring the material back to the shores and cause considerable nuisance. The cleanest material has a tendency to settle, while the foulest remains on the surface to be carried about by currents and wind. This method of disposal is applicable only to the largest communities, because of the expense of hauling to the dumping area. Dumping into lakes and rivers invariably causes nuisances. Fish life is destroyed, nuisances are created along shore or down stream, banks are built up, obstructing channels, and lawsuits usually result.

Dumping on Land.—Where refuse is disposed of by dumping on land, low areas are usually selected which will be benefited by being brought to grade. Garbage alone cannot be used in such fills. Putrefaction, accompanied by extremely objectionable odors, takes place; the disposal area becomes a breeding place for flies, the source of supply for the community, and rats, dogs, cats and birds are attracted in large numbers. Ashes make excellent fills along water fronts, in the grading of streets and for building sites. The chief objection is from fine dust blown about during dumping. Rubbish can be disposed of in fills, but contains considerable combustible material which is liable to take fire and burn or smolder for a long time, giving off objectionable odors. In combination with ashes or ashes and rubbish, garbage may be covered and successfully disposed of in fills. All dumps located close to built-up areas should be carefully supervised to prevent nuisances and insanitary conditions. Very often the privilege of sorting over rubbish is given in return for the supervision over fillng.

Burial.—Disposal by burial is applicable to garbage, dead animals and street sweepings, if they contain a high percentage of horse manure. For garbage disposal, two methods are employed: (1) Scattering the material in thin layers on the surface of the ground and plowing under. (2) Depositing in trenches and covering with the excavated soil. The latter method would seem preferable, as less material is likely to be left uncovered. Considerable fly breeding should be expected on garbage burial areas. Eggs brought in with the material develop into larvæ, pupate, and on hatching appear on the surface. At times the area will be covered with newly hatched flies whose wings have not dried sufficiently to be able to fly. At such times many birds will be attracted to the dump. At Columbus, Ohio, garbage was disposed of by burial from 1906 to 1910. For a population of 175,000 about fifteen acres per year were required for disposal.

Incineration.—As the word implies, incineration is the destruction of refuse by fire from the combustible material contained in it, or by fuel supplied from other sources. The process is applicable to the disposal of all classes of refuse. From a sanitary standpoint, incineration is a most acceptable process. If carefully carried out in properly designed and constructed furnaces, in which the temperatures are sufficiently high to decompose the gases given off, the process can be conducted without objectionable conditions arising. In a well operated plant there remains ash or clinker, containing no organic matter, which theoretically has some value for fills or road construction. During incineration, heat is developed which may be utilized, with the proper installation of boiler equipment to generate steam to operate machinery around the plant, and in some instances generate enough additional to supply an outside source. In the smaller communities the incineration of garbage alone meets with much favor, because this class of material, being not so bulky, and being much more liable to give rise to objectionable conditions, is the only waste that is efficiently and systematically collected. Garbage containing between 80 and 90 per cent moisture requires for its cremation, when disposed of separately, considerable amounts of fuel to evaporate the water so that the organic matter will burn, and it is evident that the cost of fuel for the incineration of garbage by itself will be quite high. Rubbish contains a large percentage of combustible material, has a low water content, and is easily disposed of by incineration without additional fuel, even if sorting is practiced before burning. Where garbage and rubbish are collected combined, there is usually enough combustible matter in the rubbish to evaporate the water in the garbage, so that the organic matter will burn. Starting the furnace each day to raise the temperature sufficiently to start proper combustion may require fuel other than that contained in the refuse. Several types of plants for the incineration of refuse have been developed, many of the construction features being patented, all accomplishing the same end, but differing in construction details and operating methods, depending upon the character of the material to be burned.

Feeding.—Where garbage is used for feeding, certain changes are necessary in the separation and collection of the material that are not required where other methods of disposal are practiced. The garbage should be separated from tins, cans, shells and broken glass, and should be well drained. Collection should be more frequent, as the fresher the garbage, the higher the food value.

The size of herd should be sufficient to care for the maximum amount of material. It is estimated that 100 animals ranging from pigs to large sows will consume a ton of garbage a day. Experiments at Washington, D. C., have shown that a gain of about a pound per hog per day may be expected.

Local conditions so affect the cost of feeding that comparisons of cost figures are confusing. Worcester, Mass., with a population of about 200,000, has a hog farm of 40 acres about six and a half miles from the center of the city. Collections of garbage are made twice weekly, hauled to the farm and fed to an average of 2,000 hogs. During the thirty-six months' period, between December, 1916, and November, 1919, the expenditures over receipts for the collection and disposal of garbage amounted to $99,000. With an estimated population of 200,000, the cost was about 17 cents per person per year. On the other hand, private pig raising companies have been forced to break their contracts. The return from pig feeding will depend to a large extent upon the supervision exercised over feeding.

Reduction.—Reduction applicable to garbage disposal consists in treating the material so that a separation of the liquid and solid portions takes place and grease is recovered from one or both of them. The products resulting from reduction are grease, waste water which may or may not contain putrescible organic matter in solution, gases produced in the cooking process, liberated and escaping into the air, and tankage or solid residue. Grease and tankage have a market value and are readily disposed of. The process consists of cooking the garbage with steam in digestors, pressing to separate liquids and solids, and recovering grease from the liquids by settling and skimming, and from the solid portion by grease solvents. During the process very objectionable odors may be given off, and most reduction plants, unless far removed from built-up sections, will at times create nuisances. The liquids wasted, which are high in organic matter, are also liable to cause nuisances unless properly disposed of. The reduction process, as a method of garbage disposal, is only suitable for the larger communities. To be feasible, there should be available the garbage from a population of between 75,000 and 100,000. The plants consist of a large amount of complicated, patented and expensive machinery, on which depreciation is high because of acids present in the garbage. During the past few years the cost of installing reduction apparatus has been so high that several large cities have turned to feeding animals as a means of obtaining some revenue from this class of waste to lower the cost of collection and disposal. If in the cost of operation of reduction plants there is included besides actual operating expenses the interest on the investment and depreciation on the plant, it is doubtful if more than one or two plants will show a profit in disposing of garbage by this process.

For the city endeavoring to solve its refuse collection and disposal problem, it is useless to figure how a profit may be obtained, but to figure how it may be accomplished with the fewest objectionable features and at the minimum cost. While the largest cities may resort to special methods for separate wastes and the small ones to hog-feeding or burial outside the built-up area, the most promising method for the disposal of all classes of wastes in the majority of communities would appear to be by a good incinerator with no special attachments and of such design that it will burn all classes of wastes without odor, and which can be operated under intelligent supervision to reduce the cost of upkeep and repairs.

SITUS INVERSUS VISCERUM TOTALIS.*

By LESTER J. WILLIAMS, M. D., Baton Rouge.

In searching the literature of medicine for cases of transposition of viscera, one is confronted by the paucity of reported cases from X-ray examination alone. The largest number of cases in literature is in connection with surgical operations, and even almost as many from autopsies; but of all cases of situs inversus reported, those detected by X-ray findings only are very few. With a desire to add my small quota to the number of published cases, I am presenting two cases—one a boy of nine, the other a secundipara of 30, both with a complete transposition of all viscera.

Etiology.—I think it is conceded that in tracing a cause for this interesting anomaly one must necessarily find one that operates at a very early period of the development of the embryo. Conklin advances a theory which he applies to the development of the mammalian ovum, based upon his observations in a certain species of snail. In this particular invertebrate the transposition of organs is a normal one, and can be traced back to the earliest stages. He concludes that the inversion of the polarity of the ovum is responsible for the condition, as in the ovum there is probably a distinct polar differentiation.

McMurrich has observed that with double monsters one is the exact counterpart of the other, with the exception of a reversal of its organs, or, as he terms it, ''looking-glass counterpart.'' The conclusion from this is that all cases of situs inversus were originally twins, formed by the division of a single embryo, one of which, having ceased to develop, undergoes degeneration. Sometimes this product of degeneration is included within the body of the apparently single individual, especially if the separation were an incomplete one.

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*Read before the Louisiana State Medical Society, April 19 to 21, 1921.

Karashima is of the opinion that malformations occur from trauma during the latter period of embryonic life, while Mall is convinced that germinal and hereditary influences have no effect upon the formation of monsters, and thinks that they are produced from normal embryos by ''influences which are to be sought in their environment.''

There is another view accepted by some of our learned scientists that deflection of the primary heart to the left is the primary morphological factor that produces transposition of the viscera. This theory is supported by the research work of Kolliker, Dareste and others. The experiments of Fol and Warynski seem to bear out the theory also.

No theory, however, so far presented is free from criticism, and in mentioning the above I am recording the speculations of the past in the hope that the wisdom of the future will solve the cause of situs inversus.

Historical.—The first case of complete transposition of viscera was probably observed by Riolanus in 1650, although the most celebrated case was Morand's in 1660, also described by Mery. Aristotle, however, has the honor of beginning the discussion of this bizarre anomaly by mentioning two cases of transposition of liver and spleen in animals. The first to make a special study of these cases was Cornelius Gemma, of Antwerp, in 1769. The discovery of auscultation in 1819 marked a decided advance in the study of such cases, and five years later Kuchenmeister began a discussion of cases of situs inversus after a thorough examination by the then new method of auscultation. To Karashima we are indebted for a catalogue of cases of transposed viscera, practically complete to the publishing of his article in 1912, and while his list is compiled with care and thoroughness, there are probably some omissions from the published cases. Upson, of Battle Creek, and Lineback, of Atlanta, are among the later writers to give this subject deep consideration, and their writings form no small part of the literature of this subject.

Albers, Baron, Beclard, Boyer, Bull, Mackensie, Hutchinson, Hunt, Murray, Dareste, Curran, Duchesne, Musser, Sabatier, Shrady, Vulpian, Wilson and Wehn are among others reporting instances of transposition and inversion of viscera.

Report of Cases.—I am indebted to Dr. Louis E. Bergeron for referring the case of the nine-year-old boy, whose case history follows:

L. D. B. weight 46 1-2 pounds, 47 inches tall, presents the appearance of an undersized, keenly intelligent white boy.

Family history: Father living and in good health, age 45; mother in good health, 36 years old. Both maternal grandparents died of apoplexy. Father's father's age 72, living and in good health; father's mother died of pneumonia at the age of 70. No brothers, two sisters, one 11 years, good health, the other 7, a Mongolian idiot, now showing some signs of improvement in condition. No tuberculosis, insanity or syphilis in family.

Past history: Pneumonia with entero-colitis at eleven months; measles followed by broncho-pneumonia at two years; mumps at six years. During the first attack of pneumonia Dr. Bergeron discovered the dexiocardia.

Physical examination: Lungs: Negative. Heart: Dexiocardia, no valvular lesions. Liver: Left side, otherwise negative. Spleen: Negative with exception of position on right side. Eyes: Normal reaction to light and accommodation. Throat: Hypertrophied tonsils. Patella reflex: Negative. Uranalysis: Negative. Wassermann: Negative.

X-Ray examination: Heart: A perfectly normal heart for a boy of nine years, except that there is a complete transposition, the apex extending into the right chest, while what in normal individuals would be the right side of the heart extends beyond the midline to the left.

Aorta: A complete reversal of the aortic shadow is seen; on the left side is noted the superior vena cava and the ascending aorta. On the right the descending arch of the aorta and pulmonary artery.

Lungs: Nothing abnormal discovered, the costophrenic sinuses are clear.

Diaphragm: The excursion of both normal. The left diaphragm is higher than right.

Liver: Fluoroscope shows liver on left side.

Stomach: The cardiac end of the stomach is on the right side, the pyloric on the left. The lower portion of the greater curvature is slightly above a line drawn through the crests of the ilia.

Duodenum: The duodenal cap is about 12mm. to the left of the third lumbar vertebra, the duodenum from this point extends downward and to left, thence to right. The duodeno-jejunal junction or bend is found to the right of the midline.

Colon: Without an exception every portion of the colon is reversed, the terminal ileum occupying a position on the left that it normally holds on the right. The cecum is on the left with the ascending colon. The hepatic and splenic flexures occupy reversed positions, the hepatic flexure being on the left side under the ninth costal cartilage, the splenic flexure on the right about the level of the eighth costal interspace.

Appendix: Visualized at 6-hour observation, but not visualized at 12 and 24-hour observations. Located in left iliac fossa. Not sensitive to fluoroscopic palpation.

To Dr. Jos. W. Watson I am indebted for referring to me the following case of situs inversus viscerum:

Mrs. W. D. B., age 30, married 12 years, weighs 150 pounds and height sixty inches, presents the appearance of a short, stout white woman of Spanish type, healthy in appearance.

Family history: Mother died at the age of 59 during menopause; father died at 55, cause of death—cirrhosis of liver and chronic interstitial nephritis. The patient remembers that her father was given large doses of mercury, so the antecedent strain of lues enters into the consideration of this case. Three sisters and one brother, all died under the age of seven.

Personal history: Menstruated at age of 14, normal since, until two years ago, when periods became rather irregular. Married at age of 18; husband living and in good health. Has had no miscarriages. Two children, one 8 years, the other 13 months, both in good health.

Past history: No history of typhoid fever. Has never been jaundiced. One slight attack of influenza three years ago. Malaria several times, and patient dates illness from first attack of malaria four years ago. No operative history.

Present illness: Four years ago, following an attack of intermittent malarial fever, patient noticed a feeling of numbness and tingling in entire body, with pyrosis and sense of oppression. She is of a nervous temperament, and with the rapidity of heart's action becomes very much excited during the attacks, fearing death. Indigestion, marked by nausea and vomiting, accompanies the nervous attacks. This is not dependent upon the ingestion of food, but sometimes occurs with the stomach empty. Bowels very constipated. The patient becomes very sleepy with the attack, but fights against sleep on account of the terrible dreams she invariably has.

Physical examination: Lungs: Negative.

Heart: Dexiocardia, no valvular lesions.

Spleen: Located on right side.

Liver: Left side, somewhat higher than normal.

Eyes: Normal reaction to light and accommodation.

Throat: Negative.

Patella reflex: Normal.

Uranalysis—Negative.

Wassermann: Negative.

X-ray examination: Heart: Negative, with the exception of a complete reversal; the base is on the left, with the extreme border 4mm. to the left of the left sternal line, while the apex points to the right. About three-quarters of the organ is on the right side.

Aorta: The descending arch of the aorta and pulmonary artery are found on right side, while the shadows noticed on the left are the superior vena cava and the ascending aorta. This forming, with the transposition of the heart, a true dexiocardia.

Lungs: The diaphragmatic sulci shadows are clear, the lungs show evidences of a post-influenzal fibrosis.

Diaphragm: The left diaphragm is higher than the right. Excursion of both normal.

Liver: The shadow of the liver is seen on the left side.

Stomach: The stomach is of the orthotonic type, with normal peristaltic waves, its lower portion corresponding with the height reached by the iliac crests, its cardiac orifice extremely to right, while the pylorus occupies a position in the midline slightly lower than midway between the suprasternal notch and the symphysis pubis. Contents of stomach completely evacuated in 6 hours.

Duodenum: The cap is anterior to the third lumbar vertebra, the second position extends upward and to left, thence downward and to right. The duodeno-jejunal junction or bend is slightly to left of midline.

Colon: While a complete reversal is noted, the descending colon is not placed as far from midline on the right as it normally occupies on the left; that is, the splenic flexure on the right side is about midway between the median line and mid-auxiliary line. The hepatic flexure is on the left side with ascending colon and cecum. There is stasis throughout the entire colon.

Appendix: At 24-hour observation cecal stasis is observed. The appendix located in the left iliac fossa shows stasis, is patulous and is sensitive to fluoroscopic palpation.

Comment.—In reviewing this paper the lack of a plausible cause or reason for situs inversus is most apparent, the mystery remains unsolved, and leaves us like Mahommed's coffin, suspended between heaven and earth. No theory so far presented is any more plausible than the following quatrain anent the celebrated case of Morand's in 1660:

"La nature, peu sage et sans doute en débauche,
Plaça le foie au côté gauche,
Et de même, vice versa,
Le cœur à la droite plaça."

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DISCUSSION.

Dr. L. J. Menville, New Orleans: I certainly feel Dr. Williams is to be complimented on the manner in which he has worked this subject up. The practical value of the problem lies in the fact of being able to determine the exact location of the internal organs of the body.

I remember several years ago an individual who was suffering from pain in the right lower quadrant of the abdomen, his condition having been diagnosed at the time as chronic appendicitis. He left town, and about two months ago he was in New Orleans suffering from pain again in that region, and while under treatment a surgeon recommended the removal of the appendix. He was X-rayed, and we found the appendix was in the left lower quadrant of the abdomen rather than in the right. Naturally that precluded the possibility of a chronic appendix.

CANCER PROPHYLAXIS.*

By J. C. WILLIS, M. D., Shreveport, La.

Perhaps no problem in either medicine or surgery within the past decade has been given more consideration, more study, and, I might add, has met with more practical results than this so-called cancer problem, not even excepting tuberculosis, and while by no means do we contend that our investigations have fully solved the problem or given us the ultimate cause in the etiology of cancer, we do know that they have supplied us with so many indisputable facts as to both what it is and what it is not, that we are now enabled to formulate a method of attack which if intelligently and energetically pursued will result in the recovery of many cases that have heretofore been hopelessly beyond our aid. Perhaps our knowledge of what cancer is not, is of as much practical importance to us in dealing with the different phases of this problem, as our real knowledge of the disease itself. In the first place, we know now that cancer is not due in the sense that infectious disease are, to a parasite. We know that cancer is not communicated from one person to another. We know now that the influence of heredity in the incidence of the common forms of cancer in the human being is so remote that the factor of inheritance may as a rule be disregarded. We know that cancer is not primarily a constitutional disease, but purely a local one, and only after a length of time, varying from months to years, according to its nature and location, does it become constitutional by being disseminated through either the blood or lymph channels. We know now that many forms of cancer have been brought in relation to some form of chronic irritation as either a direct or indirect predisposing influence, and that cancer of the cervix, the lip, the tongue, the rectum, the stomach and many of the malignant forms of disease of the skin are all clearly associated in their inception with one form or another of repeated and chronic irritation. It has also been shown in the laboratories that rough compression and manipulation of a malignant tumor are fully capable of setting its cells free to form metastases, which fact should teach us that we must use the utmost gentleness in handling them for diagnostic purposes.

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*Read before the Louisiana State Medical Society, April 19 to 21, 1921.

With knowledge thus acquired, the most important factor in connection with any disease has also been demonstrated in connection with cancer; that is, that it is both largely a preventable and curable disease. In a way most of us know this, just as we know that a diffuse general peritonitis caused by a ruptured appendix is preventable by making a diagnosis of the primary cause and removing the appendix before it has ruptured; or just as we know that an acute obstruction of the bowels from a diverticulum is preventable by removing the obstructing agent before a pathology has been produced that makes a recovery impossible. Yet in spite of this knowledge on our part, it is estimated that more than a hundred thousand people died of cancer in its various forms in the United States alone last year, and perhaps as many more will succumb to this disease the present year. In February, 1917, the National Council of the American Society for the Control of Cancer appointed a committee to prepare a manuscript for a handbook of cancer for circulation among the medical profession, in the end that the mortality from cancer might be reduced by giving to the profession a more accurate knowledge of the disease. This has been followed by other propaganda which has evidently had some effect, for a number of State medical societies, including our own, have cancer research committees, a part of whose duty it is not only to gather facts as to the advance in our knowledge of cancer, but also to teach the lay public many things that they should know about it. And it stands to reason that we must first get the co-operation of the public, or we will fall far short of our purposes. Evidently and without question, the family physician cannot give advice of any practical use in these cases unless his advice is first sought, and we must get this co-operation of the public if we are to have the full benefit of our present knowledge of the disease, and to say to a layman that cancer is curable in the early stages is not sufficient, for he has no knowledge of what constitutes an early stage. But it is not possible for us to teach him the nature of these influences, which we know by experience and from observation that may lead to the development of cancer, and then follow this up with instructions as to what constitutes prophylaxis, as well as those conditions which show that cancer has already developed. When we have done this, we shall have accomplished much toward solving this so-called cancer problem.

Unfortunately, many people believe cancer not only to be incurable, but hereditary as well. They regard it as a stigma upon their otherwise good family name, and think that it should be referred to only under the direct stress of circumstances, and then only under the strict censorship of the family physician. (All of us have had that experience.) They tell us in the most strictly confidential manner that one or more members of their family have died of cancer of some organ; and for that reason, and often for that reason alone, they are afraid that they will sooner or later succumb to the same trouble. As a consequence, they go through life thinking not only of themselves as inevitable victims, but are morbid in the thought that they in turn will transmit this stigma to their own children. Evidently these people are entitled to the facts as we know them. However, they should be taught also that every mole, wart, tumor, birth-mark and chronic ulcer is a potential cancer, and should receive both prompt and proper treatment. Dr. Bloodgood, of Johns Hopkins Hospital, is authority for the statement that of twelve hundred cases of cancer of the skin and mucous surfaces observed in that institution, every one of them had been preceded by a lesion before the development of cancer.

To tell the average layman that cancer is curable in its early stages is usually unintelligible to him, because he is thinking of a clinical cancer and you are talking about a biological one. He probably calls to mind some acquaintance, friend or possibly a member of his own family who has been afflicted with cancer, and perhaps operated on without results, and naturally he is skeptical. It is then our duty to teach him the difference between biological and clinical cancers; in other words, we should teach him prophylaxis as well as those indications which show that the disease has already developed. Dr. Mayo is authority for the statement: "No one has yet seen a cancer of the skin or mucous membrane of the body which was not preceded by some form of chronic irritation, and investigation of the inner surface of the body reveals the same condition, always preceding cancer." This being true, clearly then we are notified before the storm breaks, and it is our duty not only to interpret their significance, but to teach the public, who is dependent on us for guidance and protection, of this significance as well.

According to available statistics, cancer of the stomach is the most common form of malignancy. Welch is authority for the statement that cancer of the stomach is responsible for one per cent of all deaths of persons past the age of twenty, and in a study of the post-mortem diagnoses of the chief cause of death of three thousand persons Cabot observed that eighty-three died of cancer of the stomach (two and three-fourths per cent). Friedenwald, in giving statistics of deaths in the city of Baltimore for the year 1913, from the seven organs most frequently involved, primarily showed the following results of white male and female:

	Male	Female	Total
Liver	21	47	68
Stomach	71	47	118

Female organs		69	69
Breast		39	39
Esophogus	10	6	16
Rectum	11	9	20
Intestines	9	18	27

We thus observe from these statistics that the city of Baltimore, which I think a fair criterion for the rest of the country, furnishes more deaths from cancer of the stomach alone in white males than it does deaths of white females from cancer of the organs of generation, and more deaths of white females from cancer of the stomach than it does from cancer of the breast, which is the most common form of cancer in the female next to cancer of the female organs of generation, with the exception of cancer of the stomach, as noted above. Undoubtedly the principal cause of this high mortality of cancer of the stomach is due largely to conditions which preclude an early diagnosis of the disease, for unfortunately a large proportion of the early symptoms of cancer of the stomach do not differ materially from many of the ordinary forms of so-called indigestion, and are treated as such until the golden opportunity has passed. This opportunity to obtain an early diagnosis necessarily prevents the institution of the only treatment, surgery, by which we may hope to effect a cure. Inasmuch as the mortality of cancer of the stomach is proportionately large, it is most important that we emphasize these facts, which may lead to a reduction of the death rate from this affection, and Bloodgood aptly suggests to us that as we have trained ourselves to remove the appendix in order to possibly prevent the patient from dying from peritonitis in cases of appendicitis, even when the patient is suffering little or no discomfort, and often when the attack has been very insignificant, even so must we educate both ourselves and the patient suffering from internal cancer that we operate not so much for symptoms or pain, but to save him from death. Fortunately, we have at our command now the X-ray and fluoroscope, which if resorted to early, under proper conditions, are of the greatest benefit to us in making a timely diagnosis in these cases, and we should lose no time in having every case of obstinate indigestion that cannot be attributed to some other known cause placed in the hands of an expert radiologist for diagnostic purposes; and when the diagnosis (or even probable diagnosis) is made, we should insist upon a radical operation, or at least an exploratory one in doubtful cases, if we are to reduce the mortality of this disease.

Because of the campaign for the education of the public, the mortality from two forms of cancers have been greatly reduced in the past decade. I refer to cancer of the uterus and of the breast As a result of information thus gained, hundreds of women are daily consulting their family physicians or surgeons and submitting to examination and operations for conditions which they formerly accepted as a natural course of events governing their lives, for they are being taught that practically every abnormal lump or tumor of the breast, if not already a clinical cancer, is a potential one, and should be treated as such; they are being taught that tears of the cervix as a result of child-birth produces favorable conditions for the development of cancer and should be repaired, and that every case of irregular hemorrhage from the uterus, especially in women more than thirty-five years of age, should be investigated, and every persistent and so-called ''change of life'' hemorrhage should be looked upon with extreme skepticism. And, most emphatically, no suspicious tumor of the breast under any circumstances should be removed without the surgeon being prepared to have a frozen section promptly made, and prepared to do the radical operation preferably under the same anesthesia, provided the report is positive for cancer. Dr. Bloodgood, in one of his remarkable essays on cancer, tells us that Dr. Agnew, the eminent professor of surgery of the University of Pennsylvania, honestly admitted in one of his last clinics at the University Hospital in 1890 that in an experience of forty years with hundreds of operations he had never permanently cured a cancer of the breast. And why? Because he operated only on clinical cancers of the breast and did not do the radical operation. His students are today curing twenty-five per cent of their cases of cancer of the breast by doing both early and complete operations, and preventing many more by the timely removal of innocent-looking ''lumps'' of the female breast.

Mistakes in diagnosis from lack of careful examination is the most common cause of failure to recognize malignant diseases in time for a curable operation. According to Dr. William J. Mayo, "fifteen per cent of the cases of cancer of the rectum which come to the Mayo Clinic have previously been operated on for either hemorrhoids or stricture, or both, and could have easily been diagnosed as such had the operating surgeon taken the necessary pains." Many cases of malignant ulcer have been and are still being treated for syphilis until they have passed beyond the hope of operative measures, when its nature could have easily been cleared up by a negative Wassermann reaction; at least it could have been demonstrated as being non-specific, and it is no longer justifiable nor permissible to subject a patient to a prolonged course of anti-syphilitic treatment for diagnostic purposes, but the physician should ascertain at once if a given lesion is syphilitic or not and not lose valuable time in useless medical treatment. The same applies to every condition in which we are in the least doubt, for we should not be satisfied until we have exhausted every means at our disposal to discover the real nature of the disease in question, that we may not lose valuable time in instituting the proper treatment. Therefore, does it not behoove us to show the greatest vigilance and alertness to detect the first danger signals of a malady which in its early stages is certainly curable that later may or may not be amenable to treatment and when advanced is necessarily fatal?

DISCUSSION.

Dr. S. M. D. Clark, New Orleans: This is a subject in which I have always been interested, and I am delighted to have heard Dr. Willis call attention to it again. I think we owe a great deal to the past. We have learned much from our forefathers in medicine, but we also have inherited certain legacies that have been most damnable from the standpoint of advancing modern ideas, and I refer especially to cancer of the uterus and the menopause. Women have an idea that it is normal for them to have hemorrhage during the menopause. This idea is passed down to them from their mothers, and it is not easy to uproot. I have done my best with my clients to uproot it, but it will take years before this erroneous impression is eradicated.

We cannot co-operate without the public. We cannot do anything until we get medical men keyed up to the point of early recognition of the disease. I do not speak at random, but absolutely from evidence that I secure in my clinic, and it is amazing today to see the number of women go to doctors who think they have change of life and menstruate and have bleeding, and the doctor tells them not to worry about it. That is criminal. It is like a railroad engineer running past a red light on an open bridge on account of his absolute lack of knowledge. Therefore, I think we have got to pluck the mote out of our own eye and be on the alert for the detection of this. In women with leucorrhea or prolonged menstruation, signals of danger, we must make a careful examination looking for this disease.

Dr. Ernest S. Lewis, New Orleans: I want to emphasize what has been stated by Dr. Clark. I recall in the past many women sent to me in the last stages of cancer of the uterus, with a history of irregular and profuse hemorrhages ascribed by the physicians consulted to change of life, Without examination they were given ergot, told to douche with hot water, and rest. After many months without relief the physicians would again be consulted and asked for a local examination, which in many instances showed the cause of the hemorrhages to be due to cancer. These patients would then be hurried to the city to consult a specialist, who in most instances could do nothing, as they proved inoperable cases. There might have been an excuse when, I believe, I was the only specialist in the State and gynecology was in its infancy. No such excuse exists at present. The change of life is not attended with irregular hemorrhages in a perfectly normal and healthy woman. There is always a cause, constitutional or local, and the physician who fails to make an examination when consulted for irregular hemorrhages at about the change of life fails in his duty or betrays ignorance.

Dr. J. C. Willis, Shreveport (closing): There are too many cases of advanced cancer in our clinics and charity institutions, and we have got to be more careful in our examinations if we would cure them.

SOME FRACTURES OF THE BASE TREATED BY REPEATED SPINAL PUNCTURES.*

By DR. L. B. CRAWFORD, Patterson, La.

Because of their accessibility to bacterial invasion, their inaccessibility mechanically, fractures of the base are very difficult to cope with. We were long of the belief that these fractures were invariably fatal, and treatment other than cerebral sedatives, quiet and darkened rooms was little dreamed of.

Let us for a moment consider the theory of the forces causing these fractures. Rawlins (*London Lancet*, 1904) states that any force which presses the opposite poles together tends to burst the skull along the lines of the meridians, and as the base offers the least resistance, the fractures are more often found here than over the vault. I am convinced of the soundness of this statement, though I must confess that I hate to give up the old theory of countrecoup; it is one that appeals to all of us. So also does the theory of, one might say, indirect violence, as force transmitted through the spine to the base in the same manner as the head of a hammer is forced down by striking the handle.

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*Read before the Louisiana State Medical Society, April 19 to 21, 1921.

It has been estimated that 70 to 75 per cent of all fractures of the vault are accompanied by basal injuries; that all fractures of the skull are in 60 per cent of the cases due to falls from heights, and that fully half of these involve the base. In my 10 cases, 4 fell from scaffolds in the holds of ships, 4 were struck by falling trees, 1 was crushed between cane cars, and 1 was thrown from an automobile.

Crandon and Wilson analyzed fractures occurring from 1864 to 1906 in the Boston City Hospital and found a total of 1436 fractures of the skull; of these, 530 were of the base, 299 recovered, and 231 proved fatal. They estimated that 74 per cent, or 395 of these cases, had hemorrhage from at least one orifice, and the order of frequency was one ear 281, nose 168, sub-conjunctival 53, both ears 47, and mouth 44. In all of my cases was this hemorrhage present, in the ear in 7 cases.

The escape of spinal fluid is, of course, conclusive of fracture. They found it present in 27 of their cases. Though most text-books lay much stress upon its appearance, it is in reality only present in about 5 per cent of the cases.

Fractures of the vault are more often compound than fractures of the base, and they all seem to occur with equal frequency in frontal, parietal and temporal bones, while basal fractures are much more common in the mid-cranial fossa. We seldom see a compound fracture of the posterior fossa, while, on the other hand, we rarely see a simple fracture of the anterior and middle fossa.

The old rule of Bergmann and Wagner that if the patient survives the first 48 hours the prognosis is good, still holds true; but one must remember that fully 8 per cent of these cases that do survive this period succumb from intermediate complications of meningitis or abscess. Should the line of fracture traverse the sphenoidal or ethmoidal sinus, the dangers from bacterial invasion are great, the chief offender being the pneumococcus, as against the streptococcus and staphylococcus which we find in infections of the vault.

The prognosis must necessarily be guarded, an insignificant fissure of the base with focal hemorrhage in the pons or medulla may cause instant death, while an extensive fracture involving a so-called "silent area" may make an uneventful recovery. Rawlins lays stress upon the temperature chart. At first there is a variable period of subnormal temperature; this is the shock stage, and "hands off" is the watchword at this time. The patient may succumb during this stage, or he may react with a rise of temperature. Should the temperature moderately fall, the prognosis is good; if it holds its elevation, the prognosis must be held in abeyance; should it gradually rise, the termination is usually fatal, as is certainly true when it rapidly rises beyond bounds.

It is not always easy to recognize basal fractures, because it is very difficult to obtain direct evidence of bony lesions. We in a great many instances must be led by the evidence of intra and extra-cranial bleeding.

Intra-cranial extravasation, due to tearing of the dura, takes place in the subdural space and can be recognized by finding red blood corpuscles evenly distributed in the cerebro-spinal fluid. Should there be blockage of the fluid in the neighborhood of the foramen magnum, blood of course will not be found with the puncture; there have been several instances of this type reported.

Extra-cranial extravasations occur as bleeding from the nose, mouth and ear, or ecchymosis, which appear usually hours or even days after, in the orbit, under the eyelids or conjunctiva, when the anterior fossa is involved, or even in the mastoid process or down the neck, if the potserior fossa is involved. The escape of cerebro-spinal fluid from any of the sinuses is, of course, positive proof; in none of my cases was it present. I cannot see why this should give grounds for alarm, because undesirable pressure may be relieved in this way.

Involvement of the cerebral nerves often proves of diagnostic value. The facial is by far the one most commonly involved; diplopia, due to injury of the oculomotor nerves, frequently follows; so also do we find the olfactory and optic suffering from direct injury. In two of my cases a traumatic glycosuria was present. Higgins and Ogden found this present in 9 per cent of their cases.

Experiments show that 3 to 6 per cent of the cranial capacity may be taken up by a foreign body without producing compression symptoms, owing to the escape of a corresponding quantity of cerebro-spinal fluid into the spinal canal. This evidently explains why a certain proportion of these cases recover if left alone. Any increase above this per cent results in compression symptoms, and a fracture involving the posterior fossa gives rise to compression symptoms earlier than a fracture in any other region.

In treatment of fractures of the vault the indications for surgical intervention are clear-cut and are not particularly aimed at the relief of critical cerebral complications, but rather to the removal of bony deformations; the reverse is true of basal fractures; we are not so exercised at bony deformity, but rather at the more serious intracerebral complications. To Cushing most of the credit is due for a more comprehensive treatment of these cases. His sub-temporal decompression is aimed at a release from the effects of the lesion by an opening in the skull and dura. He states that there are seemingly two other less radical measures, but both have their elements of danger—namely, lumbar puncture and venesection, with a purpose of depleting the brain and lowering blood pressure. The typical operation, as described by Cushing, one seldom finds adhered to; there are all manners of flaps, incisions and bony defects, and I do not hesitate to state that no doubt for this reason the popularity of this procedure has suffered. In 1908 he adopted this sub-temporal operation to basal fractures and advocated the insertion of a rubber drain well into the base of the skull and coming out of the lower angle of the wound. I do not think it amiss to quote from him. The claims for his operation are: "(1) the frequency of the bony lesion in the middle fossa; (2) the fact that contusions are especially liable to involve the tip of the temporal lobe; (3) the exposure of the meningeal territory and ease of determining the presence of an extradural hemorrhage; (4) the possibility of draining through split muscles rather than through the scalp, and (5) subsequent protective action of the muscles in case a hernia tends to form in consequence of traumatic edema."

It is not my intention to hold out the spinal tappings as the ideal method of treatment in all cases. My ten cases will not permit me to do this, but I do claim that this plan of treatment is well within the reach of all of us, and that if done repeatedly and enough fluid is withdrawn, the intracranial pressure will be relieved and much good will follow. It is really a spinal decompression and drainage and in selected cases, and, where there is no blockage at the foramen magna, the spinal pressure will be relieved and subsequently the intracranial pressure too.

I have made an invariable rule always to do a spinal puncture in all head injuries, whether a fracture was suspected or not; it will do good in concussions, contusions, or basal fractures. In no one of the 10 cases did I puncture less than three times, and in three of the severe cases I punctured six times. I have removed at the first tapping as much as 30 c. c.; this is according to all the authorities contra-indicated, because the release of the spinal pressure might invite the increased intracranial pressure to force the medulla into the foramen magnum and sudden death ensue. Fortunately, I have had no such accident, and in the 10 cases I have done 43 punctures.

All of the cases recovered; in two, because one had a permanent impairment in the right optic and the other a most annoying dizziness which only gradually improved, do I feel that the decompression operation would have given perhaps better results. I believe that in the treatment of these cases we must not look solely to the life-saving measures, but also to means that will insure better end results, and I feel that I erred in not decompressing these two cases.

One of the cases I punctured seven times, twice in the first twenty hours. I removed 32 c. c. at the first and 30 c. c. at the second puncture; this boy, though unconscious and running high temperature for seven days, made an excellent recovery with no apparent lesions.

I believe that William Sharpe has taken the proper stand in these cases, and the treatment advocated by him I am in the future going to follow. He claims that the majority of basal fractures, in fact two-thirds of all cases, do not have an increase of intracranial pressure, as registered by the spinal mercurial monometer, of more than 12-14 mm., and as long as this is true, spinal punctures will suffice and that decompression operation is unnecessary and only an added risk. But should the pressure register over 16 mm., a decompression should be done, and should be done right off. There is a certain proportion of cases that will get well if let alone. There is no question that the decompression operation has increased a proportion that would have succumbed without operative intervention. If I will have been a means of further suggesting the spinal puncture as a procedure to increase this proportion, I feel that I have done something.

DISCUSSION.

Dr. Urban Maes, New Orleans: Dr. Crawford has opened for discussion a most important field of surgery. The compilation of figures on fractures of the skull and the classification of them should be changed, not only as regards the fractures, but also the cranio-cerebral injuries, because of the incidence of cerebral injuries, where there are no signs of fracture.

With reference to relieving pressure, we have, by means of the suggestions of Sharpe and others, methods of determining the amount of pressure, and do not treat patients as we did in the past, on the expectant plan. We thought the way to do was to put these patients to bed, to give them bromides, apply an ice cap and wait. But these patients showed up later with a great many phenomena traceable to the original accident.

The decompression operation of Cushing, with a single straight temporal incision, which admits of good subsequent closure, performed at the proper time, is a life-saving operation and, I believe, should be bilateral in most instances where any operative procedure is indicated.

The phenomena that show themselves are all pressure phenomena. We know of very few cases where there is great injury of the brain substance itself. The symptoms that occur are reactionary in character and due entirely to the failure of the cranial cavity to accommodate itself to the swelling of the brain. Since the cranium will not yield when reactionary swelling occurs, we are bound to have pressure phenomena. On this fact alone we base our treatment, which is a subtemporal decompression.

Sharpe gives interesting figures of 250-odd cases which show that by carefully observing his patients and being guided by two particular phenomena, the registration of pressure of the spinal fluid by a mercury manometer, watching for choked disc and papilledema, as indices for operation, sifted his cases down to only 76 that needed surgical intervention. In these 76 cases his mortality was 30 per cent. In collecting the statistics of other places where no operation was done, and the old expectant plan was adopted, the mortality was well over 50 per cent.

I think one word of caution is necessary, and that is: when to operate on these patients. In tracing them back we can see a rather high mortality that is our fault in many instances, because we had not learned to differentiate the symptom-complex of brain injury from that of surgical shock. I think it is wise to observe these cases always for just six hours, at the end of which time, after making careful observation and the patients have recovered from shock, it is time to operate. If we do not operate while the patient is free from shock, we will increase the mortality tremendously.

I believe spinal puncture is an extremely valuable procedure, but I think where we do not have the means of differentiation of the degree of cortical pressure by the manometer and by the cooperation of the competent ophthalmologist, it is far safer to decompress than to let these patients get along with spinal puncture. Sharpe's observations make a difference of degree in the severe cases where he decompresses, and in mild cases where he depends upon spinal puncture.

I merely want to add that this is an extremely important subject. We see many industrial accidents with head injuries, and the subject ought to be sifted out. We have attempted to standardize, in our accident work, and it has been our aim to watch these patients for shock, observe them at the end of six hours, and if they show slowing of the pulse, a slow respiration, with a mild papilledema, we decompress. If the symptoms are mild, we resort to spinal puncture. Decompression can be done under local anesthesia in most cases. I have one patient who showed compressive phenomena at the age of eleven days, due to an obstetric injury, showing local epilepsy, which became gradually generalized, and I decompressed under local anesthesia. If we can do it in an eleven-day-old baby, we can do it with an adult, and it is another factor of safety in the operation.

Dr. William M. Perkins, New Orleans: There are three points to which I desire to call attention. I would like to have Dr. Crawford tell us what precautions he uses to avoid the too rapid withdrawal of the cerebro-spinal fluid. Thirty c. c. is a fair amount, is it not? I think someone should add a word of warning pertaining to that, the too rapid withdrawal of cerebro-spinal fluid in cases where the intracranial tension is high is very apt to be followed by some herniation from the foramen magnum.

Dr. Crawford said he has not had any deaths. He may be lucky or careful. We should not recommend spinal puncture unless precautions are taken against the too rapid withdrawal of the cerebrospinal fluid.

Dr. Maes is enthusiastic about decompression. In the city of New York, at the Mt. Sinai Hospital, which is a refuge for disabled and chronically ill, with a neurological hospital, where many decompressions have been done, I saw patients there by the dozens, most of them in wheel chairs. One man, I recall, had a cerebellar hernia as big as half a small cocoanut on the back of his neck and tumors of the same size over the temporal region were common. The late end results of decompression in that institution were such as to force one against recommending the operation as easy and safe. The end results are paralysis and imbecility, as I saw them by the dozens. This work in New York is done by a neuro-surgical group of men who are very competent.

A third point is with reference to the matter of getting a compression pulse in these cases with compression symptoms. I was fairly well familiar with this thing in the Army. Men would be brought in with head injuries, with slow pulse, and some enthusiastic confrere wanted to operate at once. A pulse of 64, with great tension, called for an operation, according to some of my confreres. I was called out at 2 oclock in the morning on a cold night to operate on a man with a pulse of 64. He recovered without operation, except he had deafness in one ear, and I do not believe a decompression operation would have made any material change. When the pulse is down to 50, in my experience, it is not a serious indication for decompression. I have had a number of cases with the pulse running below 50 that were treated by the let-alone plan, and so far I have had no reason to change my opinion. The results have all been good.

To repeat, I would emphasize the three points to which I have called attention, namely, the danger of too rapid withdrawal of the cerebro-spinal fluid, the ease of decompression at the time, and the terrible end results a few years later. The pulse may go down to a very low point without the patient being in danger of death.

Dr. Isidore Cohn, New Orleans: Dr. Perkins' discussion reminded me of the story that is told of Sir William Macewen and Sir Victor Horsley. On one occasion they presented their experiences in brain surgery before the Royal College of Surgeons. Sir Victor Horsley had an array of brain specimens and said, "Gentlemen, these are the brains of fifty patients on whom I operated." Sir William Macewen then said, "Will you open the door please, and invite those fifty gentlemen to come in?" "These, gentlemen, are my results from brain surgery, these fifty living patients." **It is better to have a patient well from a decompression at the end of eight years than a dead patient.**

Dr. E. Denegre Martin, New Orleans: These cases, as reported, will no doubt add materially to the results in connection with this work. Dr. Crawford did not say whether all his patients are living or not. That is important, in that it will give us a better idea of his final results.

Dr. L. B. Crawford, Patterson (closing): I stated that my patients were living. I did not report them in detail, because even in a small series of 10 cases the reports would run something like this: male, white, 24 years of age, five feet four in height, etc., and I did not want to tire you with such details.

In these cases the usual symptoms were present. I have made a fair diagnosis in each one of the ten cases. The cerebro-spinal fluid was bloody in each instance, there was a slow pulse, and hemorrhages from one of the orifices.

I think Dr. Maes has given us a very good discussion. We have got to treat intracranial pressure, and we have to do it either with a hollow needle or with decompression. It is up to us to decide which we are going to do, and which is the more serious. I believe decompression is the more serious, although it gives better end results. I said that in my paper.

In answer to Dr. Perkins, in one or two cases I had to get out of the way on account of the great tension from the cerebro-spinal fluid, and if I had not done so when I inserted the needle I would have been knocked out of the way. In spite of what authorities have said, I took out 30 c. c. to 35 c. c. at one time, and the 10 cases are living. I could bring them here and you could talk to them, if necessary.

In answer to Dr. Perkins about seeing a handful of brains sticking out on the side of the head. I will say that is because the Harvey Cushing typical subtemporal decompression has not been adhered to. I have done decompression with flaps up here (indicating) and decompressions on the parietal bone with nothing to protect it but the skin. But if you do a typical Harvey Cushing subtemporal decompression you will get good support, and you are not so apt to have a hernia. In every one of the cranial cases the pulse comes down until you wonder how much further it is going down. It is going down in some cases until it stops.

REPORT OF A CASE OF TETANY AFTER THE THIRD PARTIAL THYROIDECTOMY.*

By HERMANN B. GESSNER, M. D., New Orleans, La.

I have thought it worth while to make a brief report of this case because of the severity of the symptoms as well as because of the general interest of the particular case.

The literature of post-operative tetany conveys the idea of a temporary and mild condition; the symptoms in the case in question were anything but mild or temporary.

Miss J. O. was operated on for the first time at Touro Infirmary, July 17, 1915; she was then seventeen years old, and presented a large goitre, with marked exophthalmos and a rapid pulse; Dr. Urban Maes performed a symmetric wedge-shaped excision. There was decided reaction, with temperature 104° and a pulse of 150. Primary union followed. The patient left the hospital nearly three weeks later, feeling much less nervous; the pulse rate had been lowered by fifteen to twenty beats to the minute. Two years later, her condition having grown worse, she was readmitted. Between July 27, 1917, and September 29 of the same year, a period of about two months, she received four boiling water injections into the enlarged gland, two of these made by Dr. Maes, two by the writer after Dr. Maes had left the city on military duty. This treatment did not relieve the patient. Some months later, in February, 1918, the writer removed the right lobe of the thyroid, this being the second operation. In the following fall the patient, not at all discouraged by the previous experience of two operations and four boiling water injections, returned for further treatment. She complained especially of great muscular weakness, which made it impossible for her to perform any household duties. Finally, on September 3, 1918, more than three years after the original operation, the third partial thyroidectomy was performed by me. While the two previous interventions had been under general anesthesia, this was undertaken with local anesthesia; four ounces of one-half per cent Apothesine were used with Adrenalin. The superior thyroid vessels were ligated; a portion of the left lobe was removed, at its superior pole, without encroaching on the posterior aspect of the gland. The immediate post-operative course was uneventful. Three days later, on the fourth post-operative day, the patient complained of a strange feeling in the hands; next day this feeling was defined as one of numbness. On the eighth post-operative day she complained of numbness and stiffness in the hands and feet, as well as of great nervousness. On the ninth day there was vomiting, followed by a general convulsion, with loss of consciousness; later, the muscles of the hands and feet were seen twitching. Examination at this time showed the presence of Trousseau's sign of tetany, pressure on the vessels and nerves of the upper extremity causing the appearance of the so-called obstetric hand, the thumb folding into the palm and the fingers closing over it. Chvostek's sign, contraction of the facial muscles on tapping with a pencil along the course of the seventh nerve, was also present. Calcium chloride was given in ten-grain doses, three times daily. On the eleventh day there was another convulsion, the duration of which was four minutes. At this time 100 cc. of five per cent calcium lactate solution were given intravenously. Between September 11, the ninth day, and October 20, the thirty-ninth day after operation, there were seven convulsions, The treatment consisted in part of intravenous injections of calcium lactate solution, from 100 to 150 cc. of a five per cent solution, administered after the occurrence of a convulsion. In the intervals between the convulsions, calcium chloride was given in quantities ranging up to ten grains every four hours. Parathyroid tablets were also given for a time up to ten a day for a period of sixteen days, during which three convulsions occurred. Following the last convulsion of this period, that of Oct. 20, the last injection of calcium lactate was given on Oct. 22. Two days later the patient was put on a form of treatment which appeared to control the convulsions, a combination of calcium chloride and sodium bromide. This combination in doses of twenty grains each, three times a day, the patient has taken from October 24, 1918, up to the present time. The only convulsion noted in this period took place a little over a year ago after several days of trial of a reduced dose, half of the above mentioned dose. A prompt resumption of the regular dose was ordered, with the result that no more convulsions have occurred.

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*Read before the Louisiana State Medical Society, April 19 to 21, 1921.

The final result in this case, after many difficulties, has been satisfactory. The young lady, compelled by the death of her mother to assume the care of a household, including several younger children, has been able to meet her obligations without injury to herself. She does the kitchen work and housekeeping in general, eliminating only the heavier washing. She finds it possible to attend a church situated at a distance of a half mile from her home.

In considering this case, the question arises, "What did the last operation do to bring on tetany?" Quite certainly, it brought on a parathyroid hypofunction, possibly by removing parathyroids imbedded in the portion of the left lobe removed. It may be that removal of the right lobe, although carried out with a view to preserving the parathyroids, removed some of this tissue and brought the patient near to a condition of hypofunction, the third operation proving the last straw. Trauma to the circulation is given by writers as an important cause of tetany; the ligation of the superior thyroid vessels under this theory would explain the untoward results of the final operation. It may be well to mention that at no time was there any gastro-intestinal disturbance to explain the pathologic parathyroid function.

When we come to consider the therapeutics of the case, there is much room for speculation. Why did the parathyroid medication fail? And why did the calcium chloride fail until combined with bromide? This feature of the case may suggest to some the existence of a previous epileptic tendency. Careful and repeated questioning, both of the intelligent patient and of her parents, has failed to elicit the occurrence of any previous convulsion at any time in her life before the third operation.

These questions must for the present remain unanswered. I must content myself with warning against excessive confidence in repeated operative interventions in goitre, especially against the danger attendant on circulatory disturbance. Possibly the therapeutic experience will be of assistance in similar cases.

DISCUSSION.

Dr. H. P. Jones, New Orleans: I think Dr. Gessner is probably correct in making the statement that his patient was suffering from a hypothyroidism at the time of the third operation. He was clinically unable to determine that fact, which goes to prove the absolute necessity of making a basal metabolism determination in all cases of thyroid that are to be treated in any manner or are to be operated on, because the basal metabolism determination of this case before the second operation might have shown that it was a case of hypothyroidism. I say might have been. It would have been shown if it had been a case of hypothyroidism. The basal metabolism determination is one that is easily made, and I think that eventually it will become so generally known that if a surgeon operates on a case of thyroid disease without having made the necessary investigation as to the degree of secretion of the gland he might, if he gets into trouble, be subjected to some embarrassment.

I have watched the development of basal metabolism apparatus of various kinds, and I want to ask you in making your basal metabolism determinations not to make them so simple as to be unreliable. Basal metabolism determination is easily performed, the technic is definite and has to be carried out. The advantage of basal metabolism observation is that it helps to decide whether to operate or not, and also aids in the therapeutic care of the case.

Dr. Allan Eustis, New Orleans: Regarding the question of tetany, the experiments of Berkeley and Beebe are interesting as being in line with Dr. Gessner's paper and his experience in this case. They found that one or two parathyroids may be removed from dogs or cats and they will not develop tetany. If about three-fourths of the gland was removed they will promptly develop tetany. Those dogs or cats that did not develop tetany on removal of the two glands, if fed meat, developed tetany, but not if they were kept on a vegetable diet. This is of interest from a dietetic standpoint.

I saw quite a few of these cases in Vienna, where the condition is much more common than in this country. Certainly, we know that there is a tendency toward an increase in the non-protein nitrogen of the blood. These cases did better individually on a low protein diet. Why, we do not know. Some experimenters have claimed that the toxemia is due to an accumulation of carbonic acid; others that it is due to an accumulation in the blood of oxalic acid, and that is why calcium salts are beneficial. There have not been any definite experiments to determine what is the cause of the tetanic convulsions. At any rate, from the experiments of Te Harra a low protein diet is indicated.

Regarding the calcium in Dr. Gessner's case, his dose was too small. You must remember that any soluble calcium salt, when it comes in contact with the carbonic acid radicle, forms insoluble calcium carbonate, and if we would obtain any results from calcium by the method described it must be given in sufficient amount to more than satify the sodium bicarbonate in the duodenal contents. Our practice is to give 30 grains of calcium lactate, four times a day, and in some instances even five, and certainly it does control the convulsions if given in sufficiently large doses. I think the explanation in Dr. Gessner's case was that it was not given in sufficiently large doses.

Dr. H. B. Gessner, New Orleans (closing): I wish to endorse what Dr. Jones said about the importance of basal metabolism. I think it is interesting to see how its study is broadening the field of the application of chemical and physical methods to clinical medicine. When this patient was under my observation we had no means of determining basal metabolism. If I am correctly informed, it is only within the last six months, possibly within the last year, that an apparatus for that purpose is in our city.

About the question of possible hypothyroidism in this case, I will say that the patient was strongly hyperthyroid. She had a marked exophthalmos, rapid pulse, muscular tremor, sweats, and so on. I did not go into these details in my paper. I simply mentioned the fact that she was strongly or highly hyperthyroid. There was no evidence of hypothyroidism.

Another point which I did not mention in my paper was that for a portion of the time, when she was getting parathyroid, she was also getting thyroid; this did not seem to make any difference. There is no question about her having been a hyperthyroid case.

As Dr. Eustis says, it may be that more of the lime should have been given. When I gave her an intravenous injection she got 150 c. c. of five per cent solution, which would not be very much, only seven and a half grams, or 105 grains, at a time. These intravenous injections were given once a week or every ten days. It is possible that a larger quantity of calcium in the beginning would have done more good. She is comfortable on 60 grains of calcium chloride a day with the bromid. It is possible she may get along with the bromids. But she has had so much trouble that I have not been anxious to experiment on her.

NEWS AND COMMENT.

The Medical Review of Reviews will issue in January an unusual number, and a copy will be sent as a New Year's gift to practically every physician in the United States and Canada. We trust the Review will meet with success in its undertaking.

The United States Public Health Service will hold examinations for entrance into the regular corps on November 14, at Washington, D. C., Chicago, Illinois, and at San Francisco, California. Candidates must be between twenty-two and thirty-two years of age and graduates of a reputable medical school. They must pass satisfactorily oral, written and clinical tests before a board of medical officers. Successful candidates will be recommended for appointment by the President. Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

The Lafourche Valley Medical Society met on August 9 at the home of the President, Dr. W. E. Kittredge, with a large attendance. Dr. J. J. Ayo read a paper on The Treatment of Dislocation of the Lower Jaw; Dr. D. T. Martin reported a case of Granuloma Inguinale, and Dr. R. W. Collins presented a paper on Pyelitis. Dr. Marion Souchon, of New Orleans, a guest of the Society, gave a practical talk and demonstration on the most efficient and practical way of repairing tears immediately after labor.

The American Public Health Association will hold its fiftieth annual meeting from November 8 to 19, in New York City, using the occasion as a Health Fortnight, which will include three major divisions: a Health Institute, November 8 to 11; a Health Exposition, November 14 to 19; also the meeting of the Association proper, November 13, will be observed as Health Sunday. The New York County Chapter of the American Red Cross and the Department of Health of the City of New York will co-operate with the General Committee of the Association, and it is expected that representatives from all States in the Union and from many foreign countries will participate in the extensive program which is being prepared. For further information regarding the meeting, and for exhibition space for educational, philanthropic and commercial exhibitors producing health articles of value, address the American Public Health Association, 370 Seventh Avenue, New York City.

THE ALVARENGA PRIZE award of the College of Physicians of Philadelphia will be made on July 14, 1922, provided that an essay deemed by the Committee to be worthy of the prize shall have been offered. The prize is about three hundred dollars and is the income for one year on the bequest of the late Señor Alvarenga. Essays intended for competition may be upon any medical subject, but cannot have been published. They must be typewritten, and if written in a language other than English must be accompanied by an English translation. The last date at which essays may be submitted is May 1, 1922. No signature must appear, but essays must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1921 has been awarded to Dr. John W. Churchman, New York City, for his essay entitled "Selective Bacteriostosis of Gentian Violet" For details regarding the Prize, address Dr. John H. Girvin, Secretary, 19 South 22nd Street, Philadelphia.

A PRIZE of $100,000 has been offered by an anonymous donor through the Cosmopolitan Cancer Research Society of Brooklyn for the discovery of a medical remedy to relieve cancer, such a reward to be known as the Cosmopolitan Cancer Prize, and has been made in anticipation of the observance of National Cancer Week, October 30 to November 5. Requirements of the award call for method of treatment, formulas and full information, with therapeutic proof in at least fifty cases.

THE FRANCISCAN SISTERS, who have a hospital at present in Monroe, Louisiana, are endeavoring to raise $30,000.00 for the erection and establishment of a hospital in Baton Rouge.

THE SECTION IN NEUROLOGY AND PSYCHIATRY of the Southern Medical Association will hold its first annual scientific session at Hot Springs on November 14. An elaborate program has been prepared, divided into two parts, one devoted to Psychiatry and the other to Neurology. A number of interesting papers will be presented and considerable discussion is to take place.

THE NEW YORK MORTALITY RECORD for the week ending September 23rd is the lowest ever experienced by that city, only nine hundred and sixty-seven deaths having been recorded with a date record of 8.77 per thousand of the population. Poliomyelitis is on the increase, however, as the number of cases of this disease reported for the week of September 24th was the largest recorded since the epidemic of 1916.

THE AMERICAN MEDICAL ASSOCIATION OF VIENNA has been re-established and some of the old functionaries have again taken up their offices. It is hoped that within a short time there will be a return to the old conditions exisiting prior to the war, when the Association was of excellent service to all English-speaking students in Vienna.

MANSFIELD AND RICHLAND COUNTY, in Ohio, have been selected by the National Health Council as the scene for the demonstration of what can be done by Americans in developing the health of their children. The choice has fallen in these places because it is believed that they best complied with the qualifications set down by the Council for the purpose of securing a typical American Community. It will take five years to complete the experiment and children of all ages will be included. The program will be so comprehensive and well balanced that it will be of use to communities all over the country.

SUICIDES ON THE INCREASE IN GERMANY. Quoting from the *Medical Record,* we find the following statement: ''Of the persons who committed suicide in Germany before the war one-third were women. During the war exactly as many women as men took their lives. In 1919 the number of men who committed suicide increased, while the number of women was the same. There were considerably fewer suicides in the Southern regions than in other parts of the country.''

THE ROYAL AIR FORCE MEDICAL SERVICE has been organized in Great Britain and regulations governing it formulated. This

Service should prove attractive and interesting to medical men, as it opens up a career which should provide much scope for research, including as it does opportunities for both permanent and short term officers.

THE CAUSE OF STAMMERING. A recent report on a survey of children in London afflicted with stammering has been made, showing that of a total number of disabilities there were 914,682 boys and only 232 girls. Frights of various kinds and night terrors were associated with many of these. Poor chest development seemed to enter as a large factor in many cases. For those who have believed that left-handedness often accompanies stammering, it may be cited that this condition was found in only thirteen cases. The report showed that in a total number of 275 cases treated in 1920 with a view to the development of the chest, 106 were cured of stammering, 61 left before cured, and 108 were still in attendance at the end of the year.

FATHER OF THIRTY-TWO CHILDREN EXHAUSTS NAMES. Disclaiming all responsibility for its authenticity, we quote the following from a New Orleans newspaper: ''A. B. Burgess, a Savannah negro, probably has the largest family in Georgia, being the father of thirty-two children and having had three wives. Twenty-six children are living happily in the suburbs. Seven sets of twins and two sets of triplets blessed this negro. The oldets son is thirty-five, and he and four other members of the family are married, giving Burgess many grandchildren. When the last set of twins was born Burgess and his wife had run out of names and they grew up nameless, selecting their own names when they entered public school. Burgess shied at selecting names when he found that among his progeny he had been doubling up, having two ''Willies'' and two ''Sallies.''

PERSONALS: Dr. A. A. Keller announces that his practice is limited to the Diseases of the Ear, Nose and Throat, with offices at 1215 Maison Blanche building; hours 3:00 to 5:00 P. M., and morning hours by appointment.

Dr. J. W. Newman and Dr. Walter E. Levy announce their association in the practice of Gynecology and Obstetrics, with offices at 3523 Prytania Street, and office hours 11:00 to 12:30 and by appointment.

Dr. David Walley has been appointed Superintendent of the Mississippi State Charity Hospital at Vicksburg.

REMOVALS: Dr. George C. Anthony from Tioga to Guaranty Bank Building, Alexandria, Louisiana.

Dr. W. H. Knolle from Medical Building, New Orleans, to Mason, Texas.

Dr. R. E. Ellzey from Goss to Pleasant Hill, Louisiana.

Dr. J. H. Landrum from Jamesboro to Alexandria, Louisiana.

The following changes in offices are announced by New Orleans physicians:

Dr. George S. Bel from the Medical Building to Suite 1600 New Hibernia Bank Building.

Dr. Robert Bernhard from the Medical Building to Suite 1600 New Hibernia Bank Building.

Dr. J. D. Bloom from 1215 to 1122 Maison Blanche Building.

Dr. C. L. Brown from the Touro Infirmary to No. 1902 Canal Street.

Dr. Arthur Caire, Sr., and Dr. Arthur Caire, Jr., from the Medical Building to No. 3435 Prytania Street.

Dr. Frank Chetta from No. 3057 St. Claude Avenue to No. 935 Esplanade Avenue.

Dr. G. F. Cocker from No. 710 to No. 1105 Maison Blanche Building.

Dr. C. G. Cole from Maison Blanche Building to Suite 1500-1510 New Hibernia Bank Building.

Dr. R. A. Davis from Medical Building to No. 3435 Prytania Street.

Dr. L. DePorter from No. 208 to 408-10 Medical Building.

Dr. George J. DeReyna from No. 3529 to No. 3088 Prytania Street.

Dr. Roy B. Harrison from Maison Blanche Building to Suite 1500-10 New Hibernia Bank Building.

Drs. Henriques and Menville have removed their X-ray and Radium Laboratory from the Maison Blanche Building to Suite 1600 New Hibernia Bank Building.

Dr. F. J. Kinberger from 636 Common Street to 3437 Prytania Street.

Dr. J. B. Larose from 621 Macheca Building to Suite 1320 Whitney Annex.

Dr. J. A. Lewis from the Cusachs Building to 1109 Maison Blanche Building.

Dr. J. L. Locascio from 1226 Elysian Fields Avenue to 35 Morgan Boulevard.

Dr. A. Mattes from 636 Common Street to 204 Medical Building at 124 Baronne Street.

Dr. Monte F. Meyer from the Medical Building to 3435 Prytania Street.

Dr. Caroline Mims from the Medical Building to 504 Title Guarantee Building.

Dr. A. Nelken from the Medical Building to 502 Title Guarantee Building.

Dr. W. D. Phillips from the Maison Blanche Building to Suite 1500-1510 New Hibernia Bank Building.

Dr. P. L. Querens from Cusachs Building to 1109 Maison Blanche Building.

Dr. W. A. Reed from the Medical Building to 502 Title Guarantee Building.

Dr. J. W. Rosenthal from Maison Blanche Building to 4026 St. Charles Avenue.

Dr. R. E. Stone from 636 Common Street to 3437 Prytania Street.

Dr. H. W E. Walther from Macheca Building to 1321 Whitney-Central Building.

Dr. R. C. Voss from 1105 Maison Blanche to 1313 Whitney-Central Building.

MARRIED: On October 8, 1921, Dr. G. G. McKellar, of Couchwood, Louisiana, to Miss Lillian Smith, of Northern Copiah.

On September 20, 1921, Dr. George J. DeReyna to Miss Marguerite Tujague, both of New Orleans.

On October 12, 1921, Dr. W. A. Knolle to Miss Helene O. Friedrichs, both of New Orleans.

DIED: On October 3, 1921, Dr. J. W. Cockerham, Confederate Veteran, died at Natchitoches, Louisiana, aged eighty-four years.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for September, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	2		2
Intermittent Fever (Malarial Cachexia)	1	2	3
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	3	1	4
Diphtheria and Croup	2		2
Influenza	1		1
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	22	29	51
Cancer	38	9	47
Rheumatism and Gout	2	3	5
Diabetes	3		3
Alcoholism	1		1
Encephalitis and Meningitis	1	1	2
Locomotor Ataxia			
Congestion, Hemorrhage, Softening of Brain	16	16	32
Paralysis	1	1	2
Convulsions of Infancy			
Other Diseases of Infancy	18	12	30
Tetanus			
Other Nervous Diseases	5		5
Heart Diseases	57	35	92
Bronchitis			
Pneumonia and Broncho-Pneumonia	20	11	31
Other Respiratory Diseases	3		3
Ulcer of Stomach		2	2
Other Diseases of Stomach			
Diarrhea, Dysentery and Enteritis	9	6	15
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	1	4	5
Other Diseases of the Liver	3	1	4
Simple Peritonitis			
Appendicitis	9	5	14
Bright's Disease	23	9	32
Other Genito-Urinary Diseases	7	6	13
Puerperal Diseases	8	5	13
Senile Debility	3	2	5
Suicide	7	1	8
Injuries	16	20	36
All Other Causes	24	22	46
Total	309	205	514

Still-born Children—White, 24; colored, 22. Total, 46.

Population of City (estimated)—White, 290,000; colored, 110,000. Total, 400,000.

Death Rate per 100 per Annum for Month—White, 12.78; colored, 22.36. Total, 15.42. Non-residents excluded, 13.26.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.05
Mean temperature	83
Total precipitation (inches)	3.94

Prevailing direction of wind—South.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 DECEMBER, 1921 No. 6

EDITORIAL.

INTOLERANCE FOR MILK IN THE NURSLING.

In a very interesting article published in a recent number of *Le Monde Médical,* Weill describes minutely the intolerance for milk which develops fairly often within a few weeks after birth.

This intolerance develops against maternal milk as well as against cow's milk and may be diagnosed by exclusion, after elimination of all digestive troubles, those due to malformation, stricture, infection, gastro-enteritis, dietetic errors, including abnormal conditions of the milk itself and either hypo- or hyper-alimentation.

The chief symptoms are: vomiting, ordinarily occurring soon after nursing and frequently of liquid milk; nervous phenomena, such as ill-humor, restlessness and insomnia; usually, constipation, though there may be diarrhea; at times cutaneous manifestations, such as erythema of the nates or eczema of the face, neck, or limbs.

Naturally the little patients either lose weight or fail to gain normally, but do not generally have subnormal temperature nor the senile aspect of those suffering from athrepsia.

Ordinary remedial measures are apt to fail. Sometimes a change from mother's milk to cow's milk or *vice versa* will succeed; the total suppression of milk will relieve, but, of course, can not be continued long without leading to inanition.

The successful treatment consists in the subcutaneous injection of milk and of the same milk which has produced the intolerance; needless to say that it must be done aseptically; maternal milk may be used in its natural state, but cow's milk should be sterilized, the former causing but slight local or general reaction, the latter producing a febrile reaction and, locally, a zone of erythema.

The dose may vary from one-half to one cc. at first, up to even 10 cc. if several doses are required, the average being of 5 cc. One injection may be sufficient or several may be given at intervals of two or three days and in increasing quantity.

The effect is usually prompt, sometimes almost magical. A series of 30 cases of intolerance for mothers's milk and twelve for cow's milk is reported. The results obtained as well as those of several others are so encouraging that we deem it justifiable to call attention to the method.

STATE SOCIETY MATTERS.

We are publishing in this issue, as part of the Bulletin of the State Medical Society, the list of chairmen of the various sections, together with the number of papers allotted to each section.

This is earlier than usual and speaks well for the "preparedness" of the secretary's office. If now the various chairmen will get proportionately busy and the individuals respond properly, the success of the scientific part of the program is assured.

Alexandria, the next meeting place has already proved more than once what it can do in the way of arrangements and entertainment, so that these remaining features of a good meeting can be counted upon.

The logical conclusion is that it is virtually "up to" the section chairmen now. If they manage to interest the membership in general, everything else will follow in due time as a matter of course.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

REST IN TUBERCULOSIS.

By DR. E. D. PRICE, El Paso, Texas.

Rest is the most important single therapeutic measure that we have at our command in active tuberculosis. Every patient with active symptoms, such as fever, rapid pulse, night sweats and emaciation should be on bed rest on a sleeping-porch, outdoors, if possible. If that is not practicable the patient should be in a room that is well ventilated by cross ventilation. He should remain in bed until fever free. Active disease calls for mental as well as physical rest. If there is a temperature under 100° visitors should be restricted and if the fever is higher they should not be allowed. Exciting stories and games are prohibited. Entertaining and talking too much increase the cough and fever.

The symptoms are much more reliable as a guide to the necessity of rest than the physical signs. The signs have their bearing upon the amount and the duration of the rest required. The more rales one finds the more rest the patient will usually require. The finer the rales the more active the case. We like our patients to lose their rales but we know that many cases get clinically well and do not.

The sick man should remain in bed until the temperature has come to normal and the pulse to 90. That may take one month, six months, or longer. His weight should be increasing and he should be free from night sweats and other symptoms of very active disease. If there is a laryngeal tuberculosis he should not be allowed to talk. He should use a pencil and pad to make his wants known.

The younger the patient and the greater the amount of lung involved, as well as complications, the longer the bed rest period as a general thing. Laryngeal tuberculosis calls for more rest and more careful handling. Like in all chronic diseases most careful medical supervision is absolutely necessary. A patient can tear down in a few hours what it will take months to build up. Tuberculosis of the larynx was formerly regarded as a hopeless complication. Now we see many throat cases get well under the proper treatment. Youth has not the resistance of middle age, or old age, and it usually calls for more rest. The history of the case has its bearing upon the amount of rest indicated also. A history of a rapid onset shows a virulent infection or an inherent lack of resistance, or both. The more lung diseased the longer it will usually take to heal. Nature cures tuberculosis by building scar tissue around the lesion and thus walling it off from the general circulation. The lesion is finally encapsulated by the deposition of lime salts, but months and years before this occurs the patient may look and feel perfectly well. This is the sequence of events in a favorable case. In a progressive case there is caseation, ulceration and cavity formation. Even then nature may succeed in stopping the disease and small cavities may heal by the contraction of their fibrous capsule. As Krause has stated, the activity of a case depends upon how well the focus is walled off. It takes a long time for the diseased tissues to be shut off from the interchange of the body fluids. Fibrosis is a slow process and until it has progressed far enough to encapulate the lesion, exercise is dangerous. ''Come West and rough it,'' has caused the death of untold numbers of tuberculous. There are a few that get well in spite of it. In fact a great many people get well of tuberculosis without knowing that they have had the disease; but for those who have had a definite breakdown, rest is salvation. Exercise causes the heart to pump more blood and lymph through the diseased area and causes the body fluids to become surcharged with toxins. These toxins cause fever, tachycardia, malaise, indigestion, etc. Exercise if persisted in before sufficient fibrosis has occurred, will cause the disease to spread. By resting our patient we limit the amount of lymph passing through the diseased focus and also the absorption of the toxins of tuberculosis.

The public, knowing that fresh air is beneficial in tuberculosis, erroneously encourages the patient to take deep breathing exercises. In active disease these pulmonary gymnastics can easily do harm by tearing down the defensive wall of scar tissue that nature is building. As Lawrason Brown has well said, "Fresh air *per se* has no more healing effect upon the lung than upon the great toe." It is only one of many measures that are useful in building up the system and increasing the resistance to the tuberculosis infection. Protracted coughing is another means of exercise that is sometimes overlooked. Most cases after they are put on bed rest outdoors do not require cough medicines, but occasionally a patient coughs so hard and incessantly that we find it necessary to relieve that cough; otherwise his fever and toxemia will increase. His disease is apt to spread if such a cough is not relieved.

In a patient doing nicely on rest the usual history of the case is: his fever comes down gradually; the night sweats cease; he feels and eats better. The digestion improves, the cough and expectoration lessen, he gains in weight, the pulse last of all begins to beat less frequently. Tachycardia is the last symptom of activity to improve usually. When these evidences of quiescence appear we begin to shorten the hours spent in bed. We put our patient on relative rest. He still should spend 16 to 18 hours of the 24 in bed and the other hours he can sit around outdoors. Any recurrence of fever calls for absolute rest again until the temperature is normal. If a patient loses weight progressively he should be put back to bed. If the temperature and pulse have been normal for several weeks and the tubercle bacilli disappear from the sputum, we put our patient on gradually increasing exercise. By exercise, we mean walking slowly on a level grade at first. A great many patients are unable to lose their tubercle bacilli, that is, they obtain only a quiescence of their disease. These patients have to have more rest and live more carefully than those who obtain a negative sputum. Dyspnea is a symptom that calls for more rest unless it is due to a widespread fibrosis. It is seen when the disease is progressing. With our patient doing well on gradually increasing exercise we can begin to think of return to work. He has now been under treatment for a long time, perhaps six months, perhaps a year and longer. It takes a long time for the lesions of tuberculosis to quiet down and much longer to heal. After returning to work the tuberculous person should make his living as easily as possible. Better work indoors at a clerical position than outdoors at hard manual labor. The tuberculous are more or less permanently impaired. Living tubercle bacilli have been found in encapsulated lesions years after the patient recovered, so they require more rest than a well person, especially for the first two or three years after an apparent cure. They should spend long hours in bed outdoors at night and on Sundays and holidays and should, if possible, get an hour's rest in the middle of the day; that is, they must learn to live on good terms with tuberculosis. By observing these rules there is much less danger of a relapse. No strenuous exercise should be permitted for several years after an apparent cure, no dancing, tennis, swimming, or baseball. The patient with his arrested disease should be under the observation of his physician for a year or so after resuming work. He should have a lung examination every month or six weeks to make sure that his disease is not progressing. Each patient is a law unto himself and must learn for himself his proper balance of rest and work. Rest alone will not cure many cases of tuberculosis, but in conjunction with the proper diet, fresh air, medicines such as iron and arsenic, artificial pneumothorax, tuberculin and autogenous vaccines when indicated, will cure 90% of incipient cases, 60% of moderately advanced cases and 15% of far advanced patients.

The value of therapeutic measures are enhanced by residence in a climate such as we have in the great Southwest, very dry air and a considerable altitude. After all, tuberculosis, like all chronic diseases, needs careful medical supervision and he who knows best how to apply the different therapeutic measures in it will naturally obtain the best results.

A CLINICO-PHILOSOPHIC INTERPRETATION OF IMMUNO-THERAPY.

By G. H. SHERMAN, M. D., Detroit.

(*Continued from November Number.*)

Terminology in Immunology. The use of familiar terms greatly aids in conveying thought. Writers in bacteriology and immunology employ many terms with which the general practitioner is not entirely familiar the use of which has a tendency to confuse the reader. Wright proposes some very apt words to explain infection and the defensive forces but to make use of them it would become necessary for the reader to memorize a set of closely allied terms and learn their meaning which would, no doubt, be a handicap to a quick grasp of the thought that is to be conveyed. The ferment concept of germ activities and the immunizing process is well established. The application of the word ferment is well understood and by pointing out that infection is sustained and immunization established by ferment action the difficulty of conveying thought through the use of new words is avoided. So wherever possible I shall cling to the ferment concept and use words accordingly.

From the foregoing it is clear that infecting organisms maintain themselves in the tissues or fluids of the living body by means of the ferments which they secrete from their surface for the purpose of digesting the food on which they live, and that these ferments constitute the essential toxic destructive factors in infective processes. Not that the germs mean to annoy or destroy the invaded tissues. To them the animal body simply constitutes soil or food which they find congenial for their growth and multiplication, so the toxic, destructive process which follows becomes incidental to the action of the ferments which they must employ to prepare the food to be absorbed and assimilated into germ-cells. Since the virulence, the germ's defensive capacity against the protective elements inherent to living tissues, depends on the effectiveness of the ferment which the germ secretes it is well to keep these ferment activities of infective processes to the forefront, and designate them as *germ produced destructive ferments.*

That tissue cells when brought in contact with foreign proteins or infecting organisms develop, under favorable conditions, substances which will disrupt the foreign protein molecule or otherwise influence the foreign protein or infecting organism to effect its destruction and elimnation has been definitely established. Some of these germ destroying substances have been definitely established and their particular mode of action determined. When a substance develops in the blood which causes infecting organisms to become sticky so they will form clumps it is called an agglutinin, when it dissolves germs it is known as a lysin; if it causes germs to precipitate it is called a precipitin, if it causes germs to be so influenced that phagocytes readily attack and destroy them it is called an opsonin. There are no doubt also substances produced during the immunizing process of which we, as yet, know nothing. All these tissue produced substances which perform the function of destroying and eliminating foreign proteins which perchance gain entrance to the blood or tissues of the body, whether of germ origin or otherwise, possess the characteristics of ferments. In the last analysis, whether this tissue produced protective substance or substances possess either one or all of these properties it is still a ferment action and should be classed as such. The term antibody to designate a protective substance or something diametrically opposed to germ produced poisoning substances has come into extensive use but does not convey the thought adequately. By grouping the various protective substances which are produced during immunization as tissue produced protective ferments we are enabled to present the immunizing process comprehensively. This brings the subject to a point where we have two diametrically opposed conditions. We have germ produced destructive ferments as the essential destructive factor in infections and tissue produced protective ferments as the protective agents which destroy the infecting organisms. This concept will enable the reader to follow the various presentations of infection and immunity without being confused by the use of a multiplicity of descriptive terms. These tissues produced protective ferments may be specific for the destruction of one particular variety of organisms or they may have collateral destructive influences on a variety of organisms.

Immunity. Immunity may be natural or acquired. Natural immunity may be explained on the theory that the non-specific protective ferments contained in the blood serum of one species will digest and destroy germs that may be able to live and cause disease in some other species. Acquired immunity may be obtained by the tissue cells becoming sensitized for the production of specific protective ferments as a result of an infection or from germ inoculations. A passive immunity may be brought about by injecting or supplying immune serum obtained from some immunized animal, as is being so successfully done with anti-diphtheritic and antitetanic serum. In this instance, the animal from which the serum was procured produced the anti-body; whereas in an active immunity the tissue cells of the person becoming immunized produce the anti-body.

Infections as Immuno-Producers. The severity of an infection depends upon the virulence of an infecting organism and the resistance the host may possess to a given germ invasion. A very virulent organism may cause but slight disturbance in some individuals while a much less virulent organism may cause a very severe infection in someone else. Furthermore, the condition known as ''being in excellent health'' is no guarantee that virulent infections may not take place nor does it follow that one in ill health is necessarily very susceptible to infection. It is a common experience to see vigorous, healthy individuals come down with typhoid fever and die, while the less robust may have a mild attack or escape infection entirely The same may be said of pneumonia, scarlet fever, diphtheria infected wounds, and many other ailments. The all-important factor in resisting germ invasions consists in developing protective ferments which constitutes the establishment of an immunity toward the various organisms causing infectious diseases.

In some diseases one attack will develop protective ferments of such intensity that the immunity will continue through life. Of these measles, small-pox, chicken-pox, whooping-cough, scarlet fever, typhoid and yellow fever are good examples. In other diseases, especially those produced by the more common pathogenic organisms, staphylococci, streptococci, pneumococci, colon bacilli, etc., immunities sufficient to overcome a given infection will soon wear off, making subsequent attacks possible.

Recovery from a virulent infecting organism does not insure a greater measure of immunity than recovery from an infection caused by a much less virulent organism of the same variety. A person who has recovered from a severe attack of typhoid fever, small-pox, or scarlet fever during an epidemic of these diseases in which highly virulent organisms are prevalent does not possess a more intense immunity than one who has recovered from the same disease during an epidemic in which less virulent organisms were prevalent. In fact, an infection by a virulent organism will overwhelm or break down the immunizing mechanism in the more susceptible and result in death; whereas an attack by a markedly less virulent organism will result in the establishment of an immunity sufficient to overcome the existing infection, and the immunity thus established is also efficient in preventing later infections in this class by even more virulent types.

Immunity Produced by Inoculating Attenuated Organisms. This fundamental principle is taken advantage of in prophylactic inoculations against small-pox. Here a non-virulent organism closely related to the small-pox germ is inoculated, and the immunity which is established in getting rid of this non-virulent organism, also protects against infections by virulent small-pox germs.

Pasteur accidentally discovered that chicken cholera germs that had been cultivated under unfavorable conditions, no longer produced ill effects when inoculated into healthy chickens, but at the same time immunized the chicken against the virulent organism. This discovery laid the foundation for protective immunization by attenuated organisms which is now being successfully employed in man. Kolmer, (Infection, Immunity and Specific Therapy, 1915, page 611), says: ''an active immunity may be acquired by inoculation with antigen so attenuated that it can stimulate the production of specific antibodies without producing the disease or otherwise greatly disturbing the health of the individual.''

With most pathogenic organisms there is more or less danger in inoculating attenuated live organisms, because of the possibility that they might revert back in particularly susceptible individuals and become pathogenic agents. For this reason, killed organisms are usually employed for prophylactic inoculations; and experience shows that just as good immunizing responses may be obtained, if the organisms are killed without heat but by the use of suitable chemicals, by repeated inoculations at proper intervals as if attenuated live organisms had been employed. This has been most conclusively demonstrated in recent years by prophylactic work. There is no more striking illustration as to what can be accomplished in this direction than the results secured from the use of typhoid vaccine in the American and European armies, in the protection of nurses in hospitals, in insane asylums and other public institutions, and among communities in the presence of typhoid fever epidemics. The same may be said of the use of meningococcus vaccine in the prevention of cerebro-spinal meningitis, as shown by the reports of the health department of Texas during the meningococcus epidemic in that State which occurred in the winter of 1912-1913. The prevention of pneumonia and other complicating infections incidental to epidemic influenza was also demonstrated by prophylactic inoculations during the recent epidemics.

The value of whooping-cough vaccine in the prevention of whooping-cough is now also well established. Preventive inoculations are further being successfully employed in cholera and plague, and the same principle is steadily being applied toward preventing other infectious diseases, as the typhus vaccine of Plotz in Serbia.

The value of vaccine inoculation for the prevention of disease is so easily recognized that there is no longer room for doubt and it is easy of demonstration. It is different, however, when we consider the advisability of giving a vaccine in the presence of an infection. Here the question naturally arises: If the live organisms causing the infection do not arouse sufficient tissue cell activities for the production of protective ferments, why should vaccine inoculations hasten such activities? In considering this question, certain basic facts that we have learned from prophylactic inoculations must be taken into consideration. That recovery from a virulent infection does not establish a greater measure or a more lasting immunity than a recovery from a much less virulent type of the same organism shows that anti-body formation does not depend on the degree of virulence possessed by the infecting germ. Attenuated organisms, germs that have in a measure been crippled in their activities by unfavorable cultural conditions, may have been so modified that when injected into susceptible animals they will not cause any material disturbance and yet cause the development of sufficient immunizing resistance so that the animal is no longer susceptible to an attack of the virulent type. This clearly demonstrates that living cell activities respond to attenuated organisms more readily than to virulent germs with the production of specific protective ferments or immunizing substances.

In the application of rabies vaccine to one bitten by a mad dog, we are directly involved in this problem of active therapeutic immunization with attenuated organisms. Here we have an infection of a virulent organism. The infection is evidently active because it is only a question of time when the victim will show syspmtoms of disease and probable die. Rabies vaccine consists of rabies organisms so attenuated that they are no longer capable of producing harmful symptoms in man. When these attenuated rabies organisms, being abnormal intruders, are injected under the skin, cell activities take place to get rid of them. Now, the essential difference between the attenuated inoculated rabies organisms and the virulent rabies germs inoculated by the dog bite, so far as their relation to tissue cell activities in their destruction is concerned, is that the virulent germs offer a greater resistance to destruction by the living cells of the host than do the attenuated organisms that were contained in the inoculated vaccine; and it is in the capacity of cell activity to destroy these germs that specific protective ferment production, sensitization, immunization takes place. In other words, the less virulent organisms are more readily attacked by tissue cells than the virulent ones, and consequently, protective ferments for their destruction are proportionately more readily produced. In compliance with the physiologic law that immunities which have become established, as a result of tissue cell activities in disposing or eliminating non-virulent organisms will also be efficient in eliminating or destroying virulent organisms, the immunity established from the rabies vaccine inoculation also destroys the virulent organisms inoculated by the dog bite.

All this clearly indicates that, during active infections, forces are at work which hinder specific protective ferment production and that this hindrance is linked with the activities of a living organism in its attempt to maintain itself by feeding upon the available substances through ferment secretion; that, for this reason, virulent, live organisms are not suited as antigens in stimulating tissue cells for rapid protective ferment formation; and, that attenuated or killed organisms, in so far as they do not resist tissue cell activities, are more suitable for rapid sensitization in specific protective ferment production. It is this principle that is taken advantage of in applying vaccines in combating infections.

Therapeutic Immunization with Killed Organisms. When we come to applying bacterial vaccines to the treatment of active infections, this principle of hastening immunization by injection of attenuated organisms, that tissue cells can readily dispose of, is carried one step forward, that of killing the organisms used for this purpose. And this step has carried us to an epoch-making period in the treatment of disease; to a therapeutic measure by means of which active immunization may be hastened during the course of an infection. While it is true that Pasteur, Koch, and others treated infections with bacterial products before Wright, yet it was his work that placed vaccine therapy on a firm practical basis. His system of standardizing killed bacterial suspensions, by determining the number of organisms per cubic centimeter, made accurate dosage possible. By means of his opsonic index he was enabled to follow at least one angle of the immunizing process and thereby definitely determine whether a given dose of vaccine stimulated an immunizing response or, possibly, produced a depressing effect. He soon demonstrated that surprisingly small doses were sufficient to immunize, whereas large doses did not result so favorably. This is in accord with experimental research work on protein sensitization. Rosenau and Anderson succeeded in sensitizing guinea-pigs with 0.000,001 mil. of horse serum. This would equal about 0.00008 mg. of horse serum protein. It is found that 0.001 mil. of horse serum will sensitize guinea-pigs more regularly, and in less time than larger doses. Wright found that doses ranging from five million to several hundred million or one billion organisms, varying with different varieties of germs, was sufficient to stimulate immunizing responses. These figures are large and to the casual observer they might appear to be enormous doses; but germs are exceedingly small and this can only be thoroughly appreciated when the weight of millions of these organisms is reduced to the fraction of milligram or grain. According to Wilson and Dickson (*Journal of Hygiene,* May 3, 1912, No. 1, Vo. XII, p. 56), 50,000,000 streptococci, an average dose, would weigh approximately 0.015 mg. or 0.000231 grain.

When we consider the advisability of injecting killed bacterial suspensions in a case of extensive active infection with fever and other symptoms of severe toxic disturbances the question naturally arises: why should inoculations of killed organisms hasten active immunization where toxic conditions, as a result of the infection, already exist? Why add more toxic material in the form of a vaccine to a system loaded with toxic materials? Here the infection is not in the incubative stage as in the case of rabies infection and, furthermore, where rabies vaccine is given after symptoms of disease have once developed, it is no longer of value.

To obtain a comprehensive knowledge of the advantages of hastening immunization in extensive acute toxic infections by killed organism injections it is necessary to consider the source of bacterial intoxication and of protective ferments or anti-bodies. The one concept that has caused much confusion is based on the contention that anti-bodies are produced by the internal lymphatic organs as a result of bacterial intoxication. That bacterial intoxication is mainly, if not entirely, due to the ferments which the germs produce for the purpose of digesting the food on which they live has been pointed out before. That live virulent organisms by the vicious attack they make on the involved tissues do not favorably influence them for early protective ferment production is evident from the prolonged or destructive course such infections pursue. So, if the internal lymphatic organs come to the rescue, at best it is a tedious process and often too late to save the life of the patient. The injection of 0.0002 to 0.0004 grain of killed bacterial suspensions is evidently such an infinitesimal amount as compared to the amount of toxic material already present as a result of the bacterial intoxication that evidently no influence on the internal lymphatic organs could take place from such an injection. But when we take into account the natural inherent properties against germ invasions possessed by all the tissues of the body and that this protective function is carried on by the involved tissues, it is readily understood that even a small non-toxic amount of killed organisms when injected into healthy tissues may arouse them sufficiently to produce an adequate amount of protective ferments which when conveyed by the circulating medium to the infected area will be sufficient to aid the involved tissues in overcoming the infection. This is the viewpoint accepted by Wright and other prominent immunologists and is most readily demonstrated by clinical results.

Furthermore we must realize that infections do not involve all the tissues of the body at the same time. Germs involve or infect certain organs or portions of the body. As a result of streptococcus infection we may have a nephritis, a meningitis, an arthritis, pneumonitis, cellutitis, lymphangitis or an involvement of any other portion of the body. Even in the so-called general infections, where the streptococcus or some other organism involves the blood current, the infection in a true sense is not general because in such cases the tissues of the body are not involved and only become involved at the site where the infecting organisms circulating in the blood happens to become lodged and there set up a focus of tissue involvement. In cases of blood infection it is difficult to determine just how extensive the infection is. Careful bacterial examinations show that in many cases pathogenic micro-organisms may be found in the blood in small numbers in cases where a focus of infection exists, whereas, in other acute conditions they may be present in great numbers. But, at all events, as long as the infection is confined to the circulatory system, only that portion of the body is directly involved, the great bulk of body tissues remaining free. In recoveries from infections the tissues that are involved are the primary source for protective ferment production, while the uninvolved portions of the body are meantime taking no important part in bringing about an immunity. Since infections usually involve only a small portion of the body, and since this infected portion is called upon to produce the protective ferments to overcome the infection it is perfectly logical to exploit inactive healthy tissues by inoculating them so they will also produce protective ferments and by this means aid the involved tissues in overcoming the infection.

Wright (*The Lancet*, March 29, 1919) under the discussion of ''First Principles'', states this proposition thus: ''Placing ourselves at this point of outlook therapeutic immunization will, it is clear, be theoretically admissible so long as there remains in the body any part which is not already making its maximum immunizing response. And the programme of therapeutic inoculation would accordingly consist in exploiting in the interest of the infected regions of the body the immunizing responses of the regions which are uninfected?"

Furthermore, the presence of extensive toxic symptoms in acute infections is no evidence that these toxic germ-produced ferments are effectively influencing the involved tissues for protective ferment production with the establishment of an immunity. On the contrary, the rapid progress which infections often make under the irritating destructive influences of the germ secreted ferments it is evident instead of favorably influencing tissue cells for immuno-production in many cases retards immunity. The virulent streptococcus infection previously referred to serves as a good illustration. In that case we had a rapidly progressing infection from a slight injury produced by a needle prick. At best but a few streptococci could have been inserted into the skin with the point of a needle. Evidently the streptococci that did find their way into the skin found the environment eminently suitable for their growth and multiplication. The ferments which these streptococci secreted were evidently efficient in preparing the food on which they lived but very destructive to the tissues. In the incredible short space of time of four hours enough of this germ-produced destructive ferment had developed to cause the thumb to be swollen and very painful. Within nineteen hours the infection had extended along lymphatic channels the entire length of the arm with gangrene development of the skin where the needle had entered, associated with a temperature of 102.5°F. There was no evidence that any protective ferments were being developed by the infected tissues but on the contrary there was every indication that the toxic germs secreted ferments that were devitalizing the involved tissues to a point of non-resistance; a rapid fatal termination was averted by a timely application of therapeutic immunization. This is an extreme case but the principle remains the same. The toxic destructive properties of live virulent organisms do not always favorably influence the involved tissues for protective ferment or anti-body production and even when the infected tissues are so influenced by the infecting organisms the immunizing response is usually slow in development and often delayed until much damage is done. When an infection gains a foothold rapid immunization is the paramount element in its eradication. This the involved tissues can not readily accomplish on account of the toxic destructive influences of the infecting organisms. The physiologic principle that tissue cells will respond more readily for immuno-development under the influence of the less virulent, or killed organisms is taken advantage of by injecting killed organisms of the same kind or variety that prevail in the infected area. The tissues into which the killed organisms are injected are not aware that they are dead. They are intruders which are dealt with just the same as if a focus of infection had developed, so they get busy at once to get rid of them. The organisms, being killed, can not develop destructive ferments which will irritate these tissues to a point of fatigue, consequently their elimination is readily accomplished by protective tissue produced ferment. As an inherent provision to guard against subsequent infections, tissue cells when once activated for the production of protective ferments, as the result of contact with pathogenic organisms, continue to produce these protective ferments for some considerable time thereafter. These tissue produced protective ferments are then conveyed by the circulating medium to the infected area and there aid the infected tissues in overcoming the infection.

That this principle of utilizing healthy portions of the body by means of killed organism or vaccine injections to produce immunizing substances for the purpose of aiding the infected portions of the body in overcoming the infection is readily demonstrated by clinical experience, especially when the vaccine is applied early in the course of an infection This may be explained on the ground that early in an infection, tissue cells can more readily be influenced in their immuno-producing capacity than later on when the defenses of the body have become fatigued from the long continued exposure to germ produced toxins. Wright (*The Lancet*, March 2, 1919) was impressed with the advantages of this method from his experiences in treating infections during the war and says: ''The most dramatic and convincing because here no other therapeutic measures are employed as adjuncts—are the successes obtained in streptococcal lymphangitis, cellutitis—I am thinking, of those cases which have already been incised without striking benefit.''

I have had extensive experience with the use of streptococcus vaccines in the treatment of acute streptococcus infection and must agree with Wright that they are dramatic and convincing. It is a common experience to see such cases become quiescent in one or two days with a drop in temperature from 102° or 103° to normal after one or two inoculations and go on to rapid recovery, if the infection has not been allowed to become too extensive before the vaccine was employed.

The use of vaccines in the treatment of furunculosis offers a good illustration that killed organisms, when injected under the skin, are better immuno-producing antigens than the live organisms causing the furuncles. In some of these cases repeated crops of furuncles appear, keeping the patient in misery for months, in which every furuncle will produce more local and constitutional disturbance than a single dose of staphylococcus vaccine; and yet, the one dose of vaccine will develop more immunity than resulted from the combined influence of all the previous furuncles. Small furuncles that have started to develop will dry up, while the indurated area around those further advanced will soften, leaving a small abscess near the surface which will, on being opened, heal rapidly; after a few more inoculations at four or five-day intervals, the entire trouble becomes eliminated. This the immunizing mechanism was not able to accomplish under the influence of live organisms during months and possibly years of activity. In fact, infections by some organisms appear to have a tendency to break down immunizing resistance, whereas repeated inoculations of killed organisms of the same variety have a tendency to build up an immunity. It is a common experience to find that where a staphylococcus carbuncle develops several more similar carbuncles may be soon looked for. Recovery from an attack of pneumonia does not establish a permanent immunity, but seems to make the subject more liable to future attack. The same may be said of erysipelas. Some people are particularly susceptible to taking ''colds'' or to tonsillar infections which are usually due to pneumococcus or streptococcus activities. Spontaneous recovery from rheumatic fever makes the subject particularly susceptible to future attacks which may finally develop into chronic arthritis. When these cases are treated by the application of immuno-therapy, with injections of killed bacterial suspensions, these relapses occur comparatively seldom, and especially if vaccine inoculations are made for a reasonable length of time after recovery. The only way we can account for this is that a more complete and intense sensitization for specific protective ferment production is developed under the influence of repeated injections of killed organisms than from active infections by live organisms.

Many theoretical objections have been advanced against the use of bacterial vaccines in acute "general" infections, cases where the germs have invaded the circulating blood, on the contention that these invading organisms furnish sufficient stimulus to tissue cells for a maximum anti-body production. It must be admitted that at first thought it does not look reasonable to expect any benefit from injecting killed organisms where the circulatory system is invaded with live germs, but on closer investigation it is found that conditions prevail whch are not apparent at first.

It is well known that normal blood serum contains bactericidal substances for a large variety of pathogenic bacteria; and if a certain organism gains entrance to the blood stream and maintains itself there it is evident that germ-destroying substances for this particular organisms are not adequate for the occasion. Evidently the live organism offers a certain resistance to destruction, and until active destruction of the germ takes place no sensitization for specific anti-body formation has taken place. It is remarkable how the tissue structures of the various parts of the body avoid the infecting organism and prevent localization, when we consider the enormous number of organisms which are present in the circulating blood in these cases. And when localization does take place, certain kinds of organisms have a distinct tendency to invade certain organs, while others may localize in almost any part of the body. Thus the pneumococcus attacks the lung tissue; certain streptococci, the heart or joint structures; the meningococcus the cerebral and spinal meninges, etc., while staphylococci have no special predilection for localization while circulating in the blood; but active anti-body formation for the eradication of the infecting organism from the blood does not take place until localization of the infection has taken place. In this connection Allen ("Vaccine Therapy and Opsonic Therapy," Fourth Edition, p. 267) says: "Antibodies are not formed in the general circulation, but in the blood-forming organs, muscles, and subcutaneous tissues. It therefore follows that it is only when circulating bacteria have been trapped in such localities that any stimulus is given to the formation of anti-bodies.'' By injecting killed bacterial suspensions in such cases we have the distinct advantage of obtaining localization of tissue cell activities for protective ferment production and this is accomplished with an antigen that offers no resistance, so a full measure of anti-body may be produced.

The unquestionable practical results that have been obtained in the treatment of blood invasions by streptococci, pneumococci, staphylococci, gonococci, typhoid bacilli and other organisms by vaccine inoculations, when used reasonably early, justifies this conception as to the workings of the immunizing mechanism under the influence of killed germ inoculations in acute infections involving the blood.

The objection that bacterial vaccine injections are not practical in acute infections on the ground that it requires four or more days for anti-body formation to take place from such inoculations and that, meantime, a sufficient antigenic stimulus will have developed by the infecting organisms to cause a maximum anti-body formation, is not sustained by experience. The simple fact that it requires considerable time to develop a measurable amount of precipitins, agglutinins, lysins, etc., from vaccine inoculations in healthy individuals is no evidence that anti-body formation has not had an earlier existence; furthermore, there is good reason to believe that tissue cells act more promptly to vaccine inoculations in the early stages of an infection than otherwise. Opsonic index determinations usually show increased opsonin production within 24 hours after a vaccine inoculation in the presence of acute infections. Besides this, clinical evidence shows that marked improvement usually takes place within one to three days. In this connection Allen, of London, says: ''The attempt, therefore, to induce on the second or third day an artificial crisis in pneumonia, which normally would not occur until the seventh or eighth, or an immediate defervescence in typhoid fever which would otherwise be delayed for many days, may therefore be justified, and practical experience, so far as it goes, does not contra-indicate the procedure.'' In the early days of acute infections tissue cells are not exhausted in their defensive powers and a dose of vaccine is so small that its toxic content, for all practical purposes, amounts to nothing as compared to the toxic substances that are continually being evolved from the existing infection, while at the same time the vaccine contains enough devitalized organisms to stimulate specific anti-body production for the destruction of the infection organisms.

There is good reason to believe that there are various degrees or stages of disintegration in the disposition of bacteria and bacterial products by these tissue-produced protective ferments, and that when the disintegration is incomplete, toxic or poisonous symptoms develop. Greely (*Journal A. M. A.,* Feb. 6, 1915) in considering the problem, says:

"Any individual becomes what is called sensitized to an infecting organism soon after it or its products gain access to the general circulation, and as this means that his lymph contains newly developed enzymes peculiarly adapted to the disintegration of the special bacterial protoplasm involved, no sooner does such protoplasm find its way into his tissues then it is attacked and more or less completely digested. The symptoms arising from this process depend directly on the activity and quantity of such enzymes that may be available, no less than on the quantity of bacterial matter introduced. If these two factors are so related that immediate and complete disintegration of the bacterial matter takes place, no symptoms whatever occur. But if the digestive process proceeds relatively slowly, as with our gastro-enteric digestion of albumin, through albumose and peptone to amino-acids, the poisonous action of the intermediate products shows itself in symptoms of inflammation at the point of introduction—in fever, increased pulse rate and malaise generally."

The prompt relief from fever and other toxic symptoms, often within 18 to 24 hours after vaccine inoculations, when used early in severe acute infections like pneumonia, puerperal sepsis, erysipelas, typhoid fever, and so forth, indicates that vaccine inoculations hasten protective ferment production to such a high degree of efficiency that toxic materials are largely or entirely disposed of.

Bacterial Vaccines in Chronic Infections. Chronic infections present a condition in which the living cells of the host have developed a certain tolerance to the presence of micro-organisms. This is evidently due to a certain resistance that the invading organism offers to destruction by anti-body formation, specific sensitization not having developed to a point of sufficient intensity to eradicate the infection. Here vaccine inoculations are clearly indicated, at least in such diseases as come under the domain of vaccine therapy. In the application of vaccine therapy in chronic infections we find that results are good, as a rule, yet they are not so striking and decisive as when applied in the early stages of acute infections. This may be accounted for on the ground that in chronic infections repeated auto-inoculations have crippled the immunizing mechanism, or that extensive inflammatory deposits hinder a free supply of immunized blood to gain access to the infected area.

The underlying principle involved in the action of vaccines in chronic infections is the same as in the acute varieties. In the treatment of chronic infections, however, we find that reactions, both local and general, are more pronounced as a rule, smaller doses should be applied than in severe acute cases, and inoculations should be made at longer intervals. Why this condition prevails I will not attempt to explain here. Most reaction is usually observed after the first inoculation, subsequent inoculations producing less reaction under increasing dosage. Since vaccine inoculations are particularly efficient in acute infections, I am persuaded that if they are regularly used in the treatment of acute disease, chronic ailments due to infections would be avoided.

THE PRACTICAL VALUE OF THE SLIDE DIAGNOSIS OF GONORRHEA AND OTHER PYOGENIC INFECTIONS OF THE GENITO-URINARY TRACT.*

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The object of presenting this paper is not to enlighten you in a new field of endeavor but to more forcibly impress, if possible, the feasibility, the importance and, above all, the diagnostic value of slide diagnosis in gonorrhea.

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In order to examine a specimen of pus or secretion obtained from any part of the genito-urinary tract, it is first necessary to properly obtain it, and, secondly to properly prepare it, before proceeding to examination. Though this may sound simple, the diagnostic value of all examinations depends upon material properly obtained and slides properly made therefrom. Thirdly, the choice of staining methods and technique employed may greatly affect the accuracy of results.

In the male the secretions or exudates within the anterior urethra are easy of access and give rise to little confusion. Cleansing of the parts, followed by stripping the urethra and wiping off the excess of material exposed, takes but a moment. Now with a platinum loop thin smears of material from just within the urethra are made on at least three slides. The loop is preferred because it can be sterilized, will pick up small quantities, and does not in any way affect or alter the material in transferring it to slide or in smearing it.

The male patient having urinated, the prostate and vesicles are massaged, smears immediately made and thinned out and not left to lump or cake on the slide, as is not infrequently done. If following massage no secretion is obtained, the urine now voided will contain all secretion that drained backwards into the bladder. Centrifugalization and examination of the sediment is the next step.

At times it may be necessary to select the shreds in urine for examination. When large, a loop or capillary pipette is used to collect them When small or few it is necessary to centrifugalize the urine, decant the supernatant fluid and repeat the process until sufficient sediment has been obtained for use.

In the female, material for examination must be collected from all parts of the genito-urinary tract. This requires ''milking'' the vulvovaginal glands, periurethral glands, and stripping the urethra. Now a speculum should be inserted and the cervix, as well as the area surrounding it should be inspected. Smears are made from the surface of the cervix, then the cervical canal and finally, with great caution, from the uterine cavity in certain cases. Material adhering to the cervix or lying in the canal is removed with a swab dipped in some such alkaline solution as sodium bicarbonate or by means of an alkaline douche. A grooved director is gently inserted into the cervical canal. By gently manipulating the director as a curette, material from the glands draining into the cervical canal and lower uterine segment may be obtained, and from this proper smears are made. If cysts are present, they should be opened with a small bistoury as they not infrequently serve as harboring sites for gonococci and other organisms.

The smears are fixed with heat and stained with Loeffler's methylene blue for one-half to two minutes. The stain is washed off with water, and the slide is dried and examined for the presence and number of organisms, their morphology, the arrangement and type of cells and the relation of the organisms to cells present.

It should be remembered that a case need not necessarily be considered gonorrheal or so diagnosed upon finding intracellular diplococci in a simple stain.

The organisms with which gonococci are often confused are colon bacilli, staphylococci, and micrococcus catarrhalis. Gram's stain aids greatly in the differentiation and should be made in all cases to avoid confusion and error. In its application, too much stress cannot be laid on the use of Gram's iodine solution for a sufficient length of time and proper decolorization with alcohol. Avoid over counter staining, for counter stains permitted to remain on the slide for a long time alter the staining qualities of organisms.

Colon bacilli are easily differentiated, even the coccoid bacillus giving no concern if only average perception is used to detect the presence of the limiting zone or complete outline of the bacillus. Though acute gonorrheal vaginitis gives the same frank picture of intra-cellular diplococci in numbers that is found in the male, the picture in the chronic case is quite a different one. After the acute stage the vaginal discharge contains very few gonococci, and innumerable secondary invaders amongst which are always many colon bacilli. These latter are often the source of confusion to the uninitiated, as it takes some little practice to be able to differentiate the coccoid forms of colon bacilli from gonococci. This is of extreme importance in the examination of specimens from the female and accounts for the lack of faith in other than one's own diagnosis. Here the criteria of diagnosis are Gram negative diplococci, distinct, typical, bean or kidney shaped and intracellular. A scattered pair is insufficent for diagnosis unless borne out by an exact history and a careful physical and laboratory examination.

Staphylococci may under exceptional instances give rise to confusion. When present they occur for the most part as actively dividing cocci. They are found both intra- and extra-cellular, and appear much like diplococci. As a rule they are Gram positive. In films that are too thick or improperly stained they sometimes appear Gram negative. They vary slightly in morphology, being more evenly paired and shorter in the long diameter than gonococci. Due to the rapidity with which certain strains of Staphylococci lose their ability for retaining Gram's stain, repeated examination in exceptional cases may be necessary to establish a diagnosis. It is here that a careful history and repeated frequent examination are of value.

Micrococcus catarrhalis is morphologically like the gonococcus, stains like it and is found both intra- and extra-cellular. It can be differentiated by the scarcity of organisms, the infrequency of more than one or two pairs in a pus cell, and the absence of any flaring up or acute exacerbation when attempts to provoke such a reaction are made. Some cases that are diagnosed as being non-specific infections due to the micrococcus catarrhalis are really gonorrheal. These are usually old or recurrent cases with few organisms in which thorough examinations have not been made.

It is no surprise therefore, that in discharges thought to be gonococci, or so diagnosed by the use of Loeffler's methylene blue stain alone, a small percent are incorrectly diagnosed. This percent materially increases if one neglects this simple examination. The possibility of a simple urethritis, urethrorrhea, colon bacillus, staphylococcal, streptococcal, influenzal, pneumococcal, diphtheroidal, and other bacterial infections, not excluding the sterile discharges and discharge from an intraurethral chancre or tuberculosis, should be kept in mind.

Making a diagnosis on history alone is not justified in these days of modern practice. Non-specific infections of the genito-urinary tract occur very frequently. The symptoms in many such cases are practically the same as those of gonorrhea. However, the prognosis is entirely different and the treatment necessary different.

Should the profession, seeking light as it does in new methods of diagnosis, forget the established means of arriving at such a diagnosis? Should such cases go through their life mislabeled, subjected to faulty treatment because simple slide examination was not made? Should misfortune befall a family or ruin follow closely as a result of such neglect?

By resorting to a procedure as old as the history of the organism, this may be avoided and cases will be properly diagnosed and errors for the most part eliminated. It is for cases that are not gonorrheal that this plea is made. The method is practical, simple and well known. Practice of medicine has outgrown quinine administration for the diagnosis of malaria, and now usually awaits a laboratory diagnosis before treatment is begun. Should not the same apply to the diagnosis of gonorrhea as well?

DISCUSSION.

Dr. C. C. Bass, New Orleans: I wish to emphasize the idea brought by Dr. Mattes' paper, namely, that a slide diagnosis of gonorrhea is one of the simplest laboratory procedures we have today. The technic is so simple and the information obtained so dependable, it would seem that one who takes the responsibility of making a diagnosis and directing the treatment of supposed urethritis or gonorrhea in any form is hardly doing justice to his patient and is hardly discharging his responsibility unless he takes advantage of this simple and practical procedure.

ON THE MANAGEMENT OF THE CHRONIC NEPHRITIC.

By ARHTHUR A. HEROLD, M. D., Shreveport.

By "The Chronic Nephritic", we are referring to those chronic renal cases, usually of the contracted-kidney type, who remain for the most part at home, occasionally attending to some business matters and, perhaps, favoring us with the opportunity of a few days of close observation and study by a brief hospital sojourn. These are cases of very difficult prognosis, as we shall detail later, and, as to treatment—we should say "management"—many get along very well by heeding our advice, while others surprise us by the length of time that they hold on in spite of ignoring it.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

It is not my purpose, in this paper, to go into the subject of diagnosis, but, in order to properly *manage* them, it is necessary that we have some method of keeping up with the patients, in order to properly direct diet and medication (if any) and also as an aid in attempting to prognosticate.

We all know how the novice might give groundless cheer by the absence of albumin or the scarcity of casts; we know, too, how the clinician, with limited laboratory facilities, is often awed and discouraged when he reads a paper, reporting cases, in which the kidney condition is guaged by Ambard's co-efficient, the non-protein nitrogen, urea nitrogen, blood sugar, creatinin, hydrogen ion, etc. In a concise and interesting paper, by Dowden of Louisville, read at the Asheville meeting of Southern Medical Association, as well as in Christian's discussion of same, the point was brought out that, generally speaking, as much can be learned by simpler methods of studying the cases; by knowing the amount of fluid intake and learning the 24 hour excretion, with specific gravity, for several consecutive days, much light can be thrown on the subject of renal capacity and impairment. To this, we might add that valuable adjuncts, easy to perform, would be the daily study of urea excretion on a constant diet, and a weekly functional test. These studies should be kept up until such time that we feel we understand the case sufficiently well to give general directions, subject to change from time to time, liberal enough to save him hardships, but cautious that, if we do not help him, we will, at least, not harm him.

Being satisfied on this score, we next turn to the treatment and, of course, the first thought is the cause. Unless we have ascertained from a careful history and physical examination, that the etiology is in the past, we should look for possible foci of infection; in this, we should be conservative, before attacking any suspected focus, we should weigh well the evidence, discuss thoroughly with surgeon, dentist or laryngologist the possibilities and the *probabilities* of the clue being right or wrong and then consider, also, if the good to be accomplished by the proposed focal extirpation would more than compensate for any harm done, otherwise; e. g., I know a nephritic who was put through the torture of having all his teeth extracted, with little, if any, improvement in the renal condition, but with the great subsequent handicap of being unable to masticate solid food as he cannot get a comfortable set of plates and, therefore, does without any. Consider the nutritional disadvantage in this case! Do not undertsand that I am arguing against removal of probable foci, in fact, I am heartily in favor of it, but: "Be sure you are right; then, go ahead."

The next point that will surely come up, if the patient be one of means, will be where is the best place to go for treatment; on this subject, I cannot do better than to quote Dr. John B. Elliott, Jr., who, in answer to the query put to him, at request of patient of mine, replied: "Keep patient at home and diet him, yourself." And right here, gentlemen, let me make a plea against this rainbow chasing so indiscriminately indulged in by this class of cases, generally encouraged by the attending physician, who, trying to evade responsibility for the unfavorable termination, which he knows will come sooner or later, tells the relatives that they cannot do better than to take him to Blank Springs, Blank Wells or Blank Sanitarium. An intelligent wife, mother, sister, daughter or nurse will, if properly directed, make his food more palatable, his chair or bed more comfortable and his surroundings more congenial than money can buy at all the resorts in the country!

It is not my purpose to outline the chronic nephritic diets, as these may be obtained from numerous sources, but permit me to state that, right on this point, the cases need individualizing; most of them do nicely on a diet with a liberal supply of sweet milk, while others (and especially those with low renal function, and, hence, retention of toxic products) do not tolerate it. I have under observation now a case, subject to recurrent spells of nausea and to whom general food is repulsive, that has lived, almost entirely, for the past ten months, on a quart of cream and ten tablespoonfuls malted milk per twenty-four hours.

On the subject of drinking water, I often think of what Prof. Metz used to call "Humbug Waters" and feel that he hardly made the term broad enough in its application. Why, all that we want for these cases is pure water; if we want it medicated, we can add the medication! While not denying that many of the mineral springs supply a good diuretic water, I contend that for the general run of chronic nephritics, good old H^2O, clean and uncontaminated, as furnished by nature in the form of rain water, is the best. The mild lithia waters and some of the laxative waters are often helpful, but beware of those heavy with chlorides, especially if our patient has a tendency to edema. I always have them avoid "hard waters".

Now, as to drugs: avoid useless routine medicines, especially diuretics, which are liable to aggravate the lesion, as careful urinalyses will prove; pure water is the best diuretic for most of the cases and the ordinary patient should be warned against over-taxing the kidneys with even this, with the suggestion, very often, of a "water-day" or "kidney-flushing-day", once or twice a month, as advocated by von Noorden.

However, we are justified in using drugs vigorously, if we know of an underlying or contributing disease, which can be benefitted in this way. I have had some success in advanced nephritis in syphilitics with the intravenous injection of bichloride of mercury; a patient under my care at the present time, with a history of thoroughly treated lues over thirty years ago and upon whom the blood Wassermann is persistently negative, seems to take a new lease on life after a prolonged course on protoiodid of mercury; I contend that the cachexia should be treated, even tho, as in this case, the laboratory shows no present evidence of the disease.

Furthermore, speaking of drugs, there is one which stands out pre-eminently—a "sine qua non", if you will—in those advanced cases with palpitation, dyspnea and anorexia. I refer to morphia. To quote von Noorden, verbatim: "I never use morphia in chronic nephritis if there is no special indication. I regard as indication for morphia stenocardiac attacks which rise in the final stages of this disease and I mean that no other drug is of such good effect under these circumstances." I consider the usual hypnotics absolutely injurious in all cases; as to bromides, they are frequently helpful, especially in the cases with hypertension, but, even here, they must take their place after morphia, which they do not supplant. Of course, the main objection to a narcotic is its constipating effect; we should guard against this by giving a cathartic as soon as the action of the drug has spent itself (and not while patient is under the influence of it). We should always be mindful of protective therapy and, therefore, proper care of bowels should be imprest upon patient and attendant.

I have made no reference, so far, to drugs of the nitrite group and, while I admit that I have used them, and sometimes with temporary benefit in cases with high blood pressure, I feel that we should and can, in the great majority of these patients, do without them, by proper handling of the case otherwise. The patient should be properly clothed so as to avoid chilling and, if he be one who attends to business, he should be warned against getting wet. When the condition permits it, he should be encon-couraged in moderate exercise, in the open air; if he cannot walk, rides in carefully driven automobiles are advisable. Inactivity is obviously bad, except in a very limited number of cases.

As hinted early in this paper, the prognosis is the most difficult part of the whole matter, so that very often the physician will get the reputation of being an ''alarmist'', when, as a matter of fact, he is only honestly mistaken and erring on the side of safety—for himself. I lost a patient with this disease, in January, who was sent home from a health resort, three years ago, with the advice to ''make her will at once''; I have one under my care now, who was brought home from an excellent institution in May, 1920, by his attending physician there, who told him that he would ''promise to get him home alive and that is all.'' And I am sure that I did nothing in either case to prolong life—unless it be that I have followed the policy of not overtreating them, as long as the families would stand for it!

Then, on the other hand, we are all familiar with the fact that many cases, apparently with slow progress of the disease and really showing some signs of improvement, will suddenly leave us by the cardiac, embolic or apoplectic route.

To sum up the management, in general:

1. Do not try to do too much; avoid over-eating. Place some reliance on nature.

2. Advise against over-taxing organs; patient should not overeat nor overdrink.

3. Get co-operation of intelligent member of family or competent nurse; if patient not seen regularly, get frequent reports.

4. Remove *probable* foci of infection. Treat any cachexia or diathesis. Avoid useless drugging, but do not hesitate to employ morphia promptly, when indicated.

5. Use common sense as to clothing, exercise and fresh air. Avoid danger of chilling, but remember the patient is no hothouse plant. Secure his confidence and there will be no trouble about his co-operation in these respects.

6. Be guarded as to prognosis.

DISCUSSION.

Dr. J. B. Elliott, New Orleans: As regards the prognosis in cases of nephritis, I depend almost entirely upon the phthalein test. We had a remarkable case in New Orleans about five years ago. A young man came into my office whom I had known for several years and whose urine I had examined over and over again. It showed a few hyalin casts. The heart was hypertrophied. The blood pressure was 160. He had lost no flesh. He came back to my office after being out at one of the mineral springs. I made a careful examination and found the heart hypertrophied. There was no murmur. The blood pressure (systolic) was 160. I subjected him to the phthalein test and got back zero in the first and second hours. I could not believe it. I took him the next day and gave him another phthalein test and it came back zero. I examined him as carefully as I could, and sent him to another doctor as I thought there might be something wrong in my technic. Another physician did the same thing and found zero. He gave a prognosis of death inside of ten days. The patient died on the ninth day.

As regards the blood urea nitrogen, Dr. Jones and I do it in almost every case of nephritis coming to the office and we find the blood urea nitrogen does not rise just preceding the uremia. If you get a typical case of chronic nephritis, with albumin and casts in the urine, with generally high tension, that man will give you a normal blood urea rating of say 12 or 13. He will hardly give you a normal urea rating on a low phthalein test.

I have reviewed in the last two or three months 248 cases of high tension that I have treated in the last nine years. The blood pressure was 165 systolic at the base in these 248 cases; 167 showed albumin. On the first examination 20 per cent. showed a bare trace of albumin; 191 showed hyalin casts, and 82 showed hyalin and granular casts in the urine.

In regard to the etiology of these cases, in the last 100 cases we have seen in the office with nephritis and high tension, a blood Wassermann examination was made in 72. Of the 72 cases, 22 per cent. showed a positive Wassermann, but a great many more gave a typical history of syphilis having been treated very thoroughly. Therefore, I should say that at least 35 per cent. of the patients I see with high tension and nephritis have syphilis as a background. I believe the vast majority of cases are due to overfeeding. I do not call it overeating.

As regards the treatment, I agree with Dr. Herold, and I am violently opposed to the use of water. These patients drink too much water. They go to mineral springs, fill up with water, and come back and have trouble.

Dr. I. I. Lemann, New Orleans: Dr. Herold's paper is chuck full of common sense. The commendation that he has for the simpler tests is I think very timely. One of the easiest tests that the practitioner can carry out, and which will prove to be of great help, is the determination of the fixation of the specific gravity. If the urine is collected at two hour intervals during the day and in one large quantity from bed time to rising, it will be found in a normal individual that there is a variation in the specific gravity during the twenty-four hours of eight to ten points at least, whereas in the chronic nephritis there is a fixation of specific gravity and usually at a low point. This test also permits a comparison of the amount of urine excreted during the waking hours, or during the hours in which the patient is up on his feet, and the amount of urine excreted during the time he is recumbent. Normally, the amount of urine secreted while the patient is up and about is larger than the amount secreted while he is not on his feet.

While in general my experience corresponds to that of Dr. Elliott with regard to the phthalein test, it does not wholly. I remember several cases of low phthalein where the patient has lived a very long time. I have in my records at least one case where the reading was zero, and the patient lived over a year. We must not put our trust entirely in the phthalein test.

I wish to add my protest to what has been said against the overdrinking on the part of these patients at resorts. There are one or two resorts where it has been the custom to send patients with the idea that they can be cured of nephritis, and where they drink and drink and dilute the albumin and dilute the number of casts, but I have seen a long series of cases coming from that place who have died within two or three days after their return to New Orleans from apoplexy or coma, and often from bleeding from the nose.

Dr. A. E. Fossier, New Orleans: There are two points brought out in the discussion of this paper that are of the utmost importance, particularly the one brought out by Dr. Elliott in regard to overeating. I think a good many of the sins that have been attributed to alcohol may be rightly due to overeating. I do believe that more nephritics have been made by overeating than by the use of alcohol. This is an observation we have been able to make for many years past. A man who never did touch a drop of alcohol had frequently cirrhosis of the liver or a general sclerotic condition who is absolutely injudicious in the way of eating.

Another point emphasized by Dr. Elliott and by Dr. Lemann was the sending of these patients to springs. I can recall very well patients who went to such springs, drank a lot of water, and were brought back home to die. The reason for this is that the majority of these patients were men in the late fifties or the beginning of the sixties, men who for some reason or other either overworked or overate. Their organisms have simply been used up, their arteries have become weakened, and arteriosclerosis has taken place, and as a consequence their hearts are weakened, they are obese, and there is encroachment of the fat upon the heart muscles. They do not die for any other reason than the increased amount of work that is thrown upon the heart. These individuals go to these mineral springs with their hearts in a wobbly condition and come back with enormous dilatation and murmurs showing that the heart has failed.

The age of these patients has a great deal to do with their condition. We find patients who have been accustomed to hard work, particularly some of them are said to have made their mark in life, and in their later years they want to enjoy life, and all of a sudden they find they have high blood pressure and nephritis. Overwork is the cause in many of these cases rather than syphilis. In the early cases of true nephritis syphilis may be and is the cause in a great majority of cases, but in those cases past fifty-five and sixty, there is nothing else to bring about the process but premature old age.

Dr. Allan Eustis, New Orleans: It is not a question of calories. Carbohydrate calories do not overtax the liver. When they are burned up they form carbon dioxid and water. It is the calories in the form of protein which harm the kidneys. It is beefsteak and not apple pie and dessert. Some of our leading men will advise giving calomel every two weeks to their nephritics, but pay no attention at all to intestinal toxemia. We have heard nothing said about intestinal toxemia in the cases under discussion, and if, as Dr. Herold states, "Common sense must be used", one must consider the influence of intestinal poisons. Let us try to prevent intestinal toxemia in these cases and a great many more of these so-called serious nephritics will perhaps live for many more years.

Dr. E. Denegre Martin, New Orleans: Years ago, when I began the practice of medicine, we stimulated bad hearts and overworked kidneys. While we should stimulate bad hearts, I think it is well to let the kidneys rest.

Dr. A. A. Herold, Shreveport, (closing): I want to thank the gentlemen for their friendly discussion. The paper was not read with any idea of bringing out anything new but to emphasize things that are constantly seen.

As to the phthalein test, which was referred to by Dr. Elliott, I have had a limited experience with it. In the case I spoke of the phthalein was slightly under 30 for two hours.

As to sending these patients to mineral springs, I had a physician as a patient who went to a certain well-known summer resort and came home edematous above his knees simply because he drowned himself with drinking water. You are overworking the kidneys and the heart by consumng so much water. This physician died of uremia in less than a year after that.

This paper has brought out a discussion which should serve to warn doctors and patients against overfeeding, and having accomplished that, the object of the paper has not been in vain.

TREATMENT OF THE SOUL.*

By DR. JOHN B. ELLIOTT, New Oreans.

I realize full well that to discuss the "Treatment of the Soul" before a body of scientific medical men will invite much criticism.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

Many will ask if the diagnosis of "sick soul" in these cases is correct; just as is so often done when neurasthenia is diagnosed and the cases found later to be some organic lesion of brain or lung.

In making a plea for the treatment of the ego or soul, or whatever you choose to call that intangible thing which makes one person differ from another, I am not asking that our smallest portion of physical or laboratory research be omitted. I believe fully and thoroughly in the use of every diagnostic aid that we can marshall to unravel the numerous ailments of the human body, but I feel that in modern day medicine we are beginning to regard our patients too much as "walking test tubes"; to be boiled and filtered and incubated; to which reagents can be added or subtracted, until the end reaction is obtained and then called a "cure". I know that none of us believe in Christian Science, or Faith healing and yet the practice of both is increasing daily, I fear, in this and other countries and must have something of truth in them to hold so many together. We, as physiologists, know their fallacies but we should not shut our eyes to the good point in their teaching, namely, that contentment of the mind has much to do with the well being of the body.

Every physician attempts to find out the cause of his patient's illness, but do we dig deep enough into his or her personality and environment, where often lies the primary cause of the trouble? How often do we quiz and question and examine cases for long hours and hear stories of this or that ache and pain for which no one can find a physical cause and which, in fact, has no physical cause, but which has its source in the highest of all our attributes, the soul. These cases are not neurasthenics nor are they psychasthenics in the true definition of those words; they have neither mental nor physical fatigue, but are primarily unhappy in their environment and, in the effort to adjust themselves to their environment, they do develop neurasthenic stigmata.

The diagnostic clinic is growing by leaps and bounds in this country and is going to be the means of saving thousands of lives and much money to those equally bankrupt in health and purse, but this very centralization of knowledge will, I fear, remove that personal touch which is so essential in forcing from some patients the story of the hidden heartache or soulache which is the primary focus of the trouble. I do not forget my cases of neurasthenia cured by some wise, farseeing surgeon who discovers gall stone or chronic appendix; nor do I forget those other cases where the surgeon has been in and out two or three times and no benefit derived, because environment has not been altered nor mental unhappiness satisfied. I am ashamed to acknowledge my ignorance of modern psychiatry, but, from what little I have studied, I do not believe that I am a Freudian, nor do I use intricate psychanalysis in trying to get at the hidden foundations of these unhappy people. An open, frank avowal of my ignorance of their true conditions, after a complete study of all the physical and laboratory aids that I can command, with an equally earnest expression of my great desire to lift them out of the deep in which they seem to be engulfed, will often bring out the trouble.

Case after case occurs where the young man or young woman is sent off to school of a higher grade than that to which their parents had gone; where their minds have been broadened by a glimpse into the worlds of art and literature and educated society; where the ambition has been aroused to develop into something better than the average wage earner. Then, suddenly, the doors are shut and they go back to the small circle from whence they came, be it village, city or farm, and the struggle of adjustment begins. The unseeing parents wonder why they are not content to lead the old life and do the chores with a smile and eventually they are carried off to the doctor to find out why they are not as they were; and then begins the hunt for physical ills which are not physical. The home-loving mother or the work-a-day father are now out of touch with the unsettled daughter and ambitious son; the daughter has the hardest time as she cannot leave the home so easily to follow her own desires and so, more often, becomes unhappy and from this unhappiness develops that symptom-complex which we dub neurasthenia.

Many cases classified as shellshock in France were but an outward manifestation of the reaction to fear and horror of grewsome sights on the part of the soul. These boys were not cowards; they were of the bravest when in danger. Unfortunately for them our convalescent camps did not furnish what they needed; namely, mental rest and diversion. They were treated as if physically ill. Our British and French Allies were more farsighted; they built up morale rather than muscle.

The treatment of these cases is obvious, change of environment; work that is mentally satisfying; but most of all some one who understands why they suffer; some one who does not classify them as hysterical. Ill directed sympathy from family or friend does more harm than well meant ridicule. The rest cure sanitarium does not bring about the desired result; these sick souls require and demand individual attention; they must be inoculated with the germ of optimism and held up until they can walk alone.

As you can readily see the attending physician has a man-sized job; he must be a psychologist rather than doctor.

As I have stated previously, I wish to apologize to you for this badly expressed talk but can assure you that I am very much in earnest in begging you to look at your patients a little more as souls rather than ''Walking Test Tubes''.

DISCUSSION.

Dr. A. E Fossier, New Orleans: I was much impresed with the paper of Dr. Elliott especially, as some others have expressed similar views and have been criticized by men who do not know anything about the subject, not that I would say anything about the soul but about the mind. The mind is an attribute of the soul. The mind has control over every cell of the body; it has control over the circulation and over the different organs. Anything that will cause a disturbance of the mind will generally cause some physical disturbance also.

For instance, my little girl was very sick with threatened mastoiditis, and I was so worried in mind that my system became an easy prey to this condition, although as a rule my resistance to disease is very great. Worry will pull down an individual very rapidly, and it is enough to cause the physical conditions that we see which will not be caused otherwise. Environment has a great deal to do with it for the same reason mentioned.

I disagree with Dr. Elliott in regard to neurasthenics or hysterics. There is a physical condition back of their trouble, and whether it is in the brain cells or in some other condition, I do not know. My theory is that it is due to the circulatory disturbances we find in connection with the visceroptoses. I believe what Dr. Crawford said in 1881 that visceroptoses may be the cause of neuroses. Psycho-therapy is indicated in the treatment of these cases. In a book on rational therapy, in the chapter on psycho-therapy, the author takes the view that much can be done for these patients by instituting psycho-therapy, and by helping the **vis medi-**

catrix naturæ. The confidence that you give to your patients that you are helping them is an important factor in treatment. Many practitioners seem to ignore the importance of psycho-therapy in the treatment of this class of patients, but we are using it consciously or unconsciously in the treatment of every patient we see. Sometimes in the treatment of constipation, if you tell a patient he should endeavor to perform the act of defecation and remain until he has a stool, he will get rid of forming a habit and, as a matter of fact, psycho-therapy is very useful and efficacious in the treatment of constipation. We know that the mind has much control over the body. A soldier on the battlefield may be wounded and not know it. He may not feel any pain. His sensations are obtunded for the time being, but as soon as sensation returns he feels through sight or touch. I have no brief for Christian Science, yet I have seen Christian Scientists do good in certain cases, and we have to open our eyes to the good that is sometimes done by them.

Dr. L. V. Lopez, New Orleans: A message so timely as that brought forth in Dr Elliott's paper is gratifying to those who are doing work along the line of psycho-therapy and psychiatry. There can be no question that this message is a warning to all physicians that we should look upon our patients as biological units, and not lose sight of the true ego or personality of the individual. We more or less pigeon-hole them as neurasthenics, (i. e., label them with a name) and give them large amounts of tonics and pills, overlooking the emotional factor which is back of the whole syndrome in spite of the physical findings.

We should be careful as regards the methods of diagnosis at our command. It is in the management of these cases that I think Dr. Elliott brought out a timely message, that is, of treating the patient in such a way that he can resume his social adjustment. In other words, make his life as happy as possible, so that when he does leave the hospital or the institute or office in which you are treating him, he can return to his environment, seek his social level, be contented, and be of use to civilization.

Dr. Hugh T. Patrick, of Chicago, about a year ago published an interesting article in the **Journal of the A. M. A.** on "Fear" and the importance of fear in the management of our patients. There is no question about the emotions being great factors in the etiology of the psychoneuroses, and this was particularly brought out in connection with many cases of neuroses due to stress in the recent world war. Patrick, in his article, brought out the point that when a child is afraid of a dark room we should not give that child purgative pills or tonics to remove fear. We should explain to him why the fear is groundless. It is futile to attempt to remove fear, (which is psychic), and has no physical cause for some by internal medication. The logical way is to take the child by the hand and lead him gently but firmly to the dark room persuading him to enter the room, and in this way fear will leave the child. We find a lot of these phobias in patients. From the experience I have had with these cases, I will say that you can usually trace some of these physical findings to some emotional disturbance. Emotional instabilty and lack of the power of facing facts or adjusting one's self to difficult situations are usually the factors back of the whole syndrome, and when properly treated by psycho-therapy will do more good than all the tonics and pills you can prescribe.

The keynote of Dr. Elliott's message is to individualize in treating our cases.

Dr. L. J. Genella, New Orleans: If any of the speakers will tell us in what way to go about treating this soul or ego, I would be very much obliged. In what way do they suggest measures that will benefit these patients. What measures do they suggest so that these patients can better adjust themselves to their own environment.

Dr. J. A Danna, New Orleans: It may seem out of place for a surgeon to discuss a question of this kind, but I am one of those to whom some of these patients come after they have been operated on five or six times, and the subject has been thrust upon me, as it were.

Dr. Elliott spoke of the treatment of the soul, but he speaks of it in the same sense as psychologists and the neuro-psychiatrists do. He does not give us a physiological and chemico-physical background for these troubles.

Some five or six years ago I had occasion to see a medical student in an uptown boarding house run by two sisters, the daughters of a doctor who had been prominent. They ran a large establishment, and these girls were acustomed to every luxury money could buy. Their father finally died and left nothing behind. These girls were running a cheap boarding house; the older one having the larger portion of the responsibility was the one I saw. She said, "I am running this boarding house," but she added, "Oh, doctor, I am in trouble. I have this ailment and that ailment." She talked to me for quite a while and wanted to know what I thought was the matter with her. As far as I could see, there was absolutely nothing wrong except she had a succession of depressing emotions and if she was put in a proper environment she would be all right. To put her in that environment and get her all right would be difficult.

As a result of seeing patients operated on a number of times and for whom I have had to do something, I have found that there were other things besides surgical troubles which were responsible for the aches and pains.

For a number of years I have been personally studying the effect of adrenalin on some of these cases. Our study of the internal secretions is in its infancy, and I rise now to discuss this paper in order to impress the fact that with the study of the internal secretions we are going to find physical remedies for these patients. I put this woman on adrenalin I treated her for about a year and a half, and did not see her any more for three years. The first time I saw her she was a wrinkled old maid. She was not making a success of the boarding house business. She intended to move. When I saw her three and a half years afterward she came into my office a handsome, robust-looking young woman. She was doing fine in her new business, was prospering, and now these two girls were comfortable

I throw this out as a suggestion. There is nothing new in it. There is a novel written by a man in which he describes the power of a homeopathic doctor, who has a physical remedy for every emotion that a patient complains of, and for each different emotion he has a separate remedy. I urge you to carry that thought home with you.

Dr. P. B. Salatich, New Orleans: I think one mistake we make is that we are in too much of a hurry to examine our patients when they have got some physical trouble, instead of carefully listening to their history. Many times, after listening to a history as given by the patient, you can make a diagnosis. You have got your diagnosis made before you have examined her. Occasionally, if you cannot make the diagnosis from the history, you examine them. You first think of the appendix or gall-bladder, and after you have examined all these organs and you cannot make a diagnosis, you are thrown back on the history and may be you will be able to make a diagnosis from it. I want to mention a case showing the effect of the mind on the body. I remember a man coming to the hospital who was shot at close range and the bullet entered the right side over the costal arch. The man was so sick that we thought it best to delay trying to find the bullet. He was almost pulseless. He was anemic. He had just finished eating a big meal. I took it upon myself to examine his coat, which I did and found the bullet in the lining of his coat. I showed him the bullet and said to him, "Well, boy, you are lucky that bullet did not enter your abdomen, but it hit your rib and I found it in the lining of your coat." I put on a collodion dressing, and in less than fifteen minutes he had as good a color as you would want to see and walked out of the hospital.

Dr. Walter J. Otis, New Orleans: Dr. Elliott is to be complimented for introducing as sublime a theme at this meeting. I might say that his paper has been the most talked of at this session. Everyone was wondering from what angle the subject would be discussed.

The subject of this afternoon's paper well might be taken as a sermon by our fellow men who attempt to criticize the physcian. The paper brought out a number of features to which we should give heed, and which are of vital import. One is a thorough understanding of your patient. Obtain a careful and complete interview, make a most detailed physical examination, devote much time to the case. The other point is to gain the confidence of your patient and to retain the same. Put yourself in the position of the other fellow, for the physician does meet those who are ill in body and soul.

The question of maladjustment in the adolescent school child is largely due to environmental contact, complexes arise which are badly handled. Result: repression, anxiety, worry, psychic trauma. Reach in and help this sort out of their complexities. That is one way of treating the soul.

Endocrinology and psychanalysis should have their place in aiding these cases to a complete social adjustment. To some the credence of the Soul has been strained by their familiarity with the dead and the material view obtained in the dissecting hall, but there are physicians who, like Dr. Elliott, are willing to treat the Soul as such.

Dr. J. B. Elliott, New Orleans (closing): The last speaker (Dr. Otis) covered the ground. These patients are to be treated by confidence. I never ridicule a patient. As a teacher in college for twenty-seven years I have never laughed at a student in my life. If you want to teach the man medicine, you should never laugh at his mistakes, especially when you get older, you never do it. The same way with patients. Never ridicule them. All they want is somebody behind them to lift them out of a hole. They are in the wrong rut. They are not wrong physically. Of course, you cannot lay down hard and fast rules, but you should aim to get their confidence. You should try to put them in a new environment. Show them that others have taken up outside work; that those who have taken up work along psychotherapeutic lines have gotten well because they have gotten to care for things outside of themselves. Many a medical student becomes neurasthenic. His soul is not in the first two years of medicine. When he becomes intensely interested in the study of medicine it will take him out of that struggle. There are thousands of people in all walks of life who have gotten down into a hole. They need help and encouragement. We should try to imbue them with enthusiasm. Those who have nothing to do should be put at congenial work. Women who have no children especially are prone to this trouble. If we put them in an orphan asylum it will cure every one of them. Men have this trouble. Men who are strong and muscular break down and have crying spells. These people are not crying because they are mentally or physically sick. They are mentally unhappy. What makes one person unhappy does not make another one unhappy.

With reference to endocrinology, I agree thoroughly that this is the greatest field I know of today in medicine. We should study up the effect of these endocrine glands. We are beginning to have a glimpse of that kind of thing right now, and there is an enormous field opening up before us.

STATISTICS IN LOUISIANA.*

By OSCAR DOWLING, M. D., New Orleans.

Apparently complete statistics of all the known material resources of Louisiana are available. Forest regions, acreages of virgin timber, cut-over land, alluvial bottoms; the yield of several crops of cotton, sugar, corn, etc.; the number of dipped cattle; the output of sulphur, salt, oil, gas, the lignite—in fact, any information concerning these and the other numerous productions of Louisiana can be had in terms of cost or units of the products, or both. It would seem in a state so enlightened as to financial values, there would be thought taken for the most important of all statistics, those that pertain to the fundamentals of human welfare, vital statistics.

The General Assembly of the State by the authority of the Constitution has enacted a law which is adequate for the gathering of statistics of births and deaths and has vested in the State Board of Health the authority to gather reports of contagious diseases. The U. S. Bureau of the Census has granted the franking privilege for morbidity reports and correspondence. The State Board of Health, under the legislative enactment, has in operation a Bureau of Vital Statistics. Yet, with all the authority necessary and the means of operation, our reports are lamentably incomplete.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921

We were admitted into the registration area for deaths in November, 1918, after a most strenuous campaign carried into every section of the State. It followed educational efforts which were made for eight years previous, to my knowledge and perhaps, at intervals at least, for some years before. Getting into the area meant that the representatives of the Bureau who came to examine our records and to inquire into conditions in the State found we had ninety per cent. of deaths recorded.

Since 1918 and before, we have made, as far as funds permitted, an intensive campaign to get the required number of births reported that Louisiana might gain recognition as the 21st, 22nd, or 23rd State having this honor, but as yet we have not the necessary certificates and twenty-three states are in.

In reports of births our shortcomings are very apparent. We have on record for the State outside of New Orleans for 1920, 26,727 certificates (1,329 delayed); for New Orleans 9,264 making a total of 35,991. If the accepted number of births per thousand (25) (and in Louisiana we have reason to think the number higher) is correct we should have 44,944 birth certificates on file. We have a rate of 20.1 per thousand. 2,244 delayed 1919 births, and 338 prior to 1919, reported in 1920, are not included. There are more difficulties in the collection of births than deaths due to causes which are familiar to you. But the obstacles do not count when the Bureau at Washington makes up its report. It is only by the cold figures which go forth to the health authorities of the civilized nations that our status is determined.

In morbidity, our records do not show up even so well as in births. For example, reports of four diseases with corresponding deaths are as follows: For 1918, 1919, 1920 (New Orleans included) there were reported: Cases of tuberculosis, 5,338; deaths, 7,294. Cases of diphtheria, 2,247; deaths, 326. Cases of typhoid, 3,225; deaths, 1,369. Cases of malaria, 6,104; deaths, 1,559.

The discrepancy between the reported cases and the number of deaths speaks eloquently of the very large number of *cases not* reported. The four diseases named were selected because the etiology of these is known and the means by which they may be eliminated absolutely without question. These diseases are controllable, preventable, we know it, yet the reports are not sent to those whose obligation it is to control or prevent. It is true in many, all too many instances, neither local nor state boards could accomplish *either* partial or complete control, but reports are the first and fundamental essential for intelligent action.

In tuberculosis, the reports are incomplete because of many cases of long standing but if these were always reported when first seen, the records would be at least indicative of conditions. But it is not only in the number of reports that we are lacking, the incompleteness of the birth and death certificates is one of the greatest obstacles. The U. S. Bureau of the Census requires certain data. If the certificate is sent by the local registrar with sex, color, age, or specific cause of death not stated, that information must be obtained by letter. During one month recently, practically 80 per cent. of the certificates received had to be "queried". Although form letters are sent, and through courtesy of the Government a franked envelope is also enclosed, we are frequently weeks, or months, without a reply, and in any number of instances, certificates are "queried" four times before the items are completed.

The specific cause of death, according to the International standard is exceedingly important. It must be stated in accordance with the Government ruling and if you will pardon digression, I should like to present briefly, the history of the present classification and changes that have occurred. Medical nomenclature, classified for statistical purposes, dates back to 1763. A few years later, Cullen published another classification of diseases. These were followed by the classification of William Farr. In the Farr nomenclature, deaths from disease or injury were classified into five divisions which is maintained, Stouman says, in many points down to the present day. The present classification dates from about 1885, when Bertillon's system was adopted by the International Statistical Institute in its meetings from 1885 to 1893 and finally in 1900 by the First International Commission session. A revision of the Bertillon system was made in 1909. Most countries have adopted or will adopt, this scheme in the future.

That this nomenclature would not suit the requirements of all countries was soon recognized, and improvements were introduced at two sessions of the International Commission. These sessions took place in 1900 and again in 1908, both at Paris, and a third met in the same city, October 11, 1920. This last International Commission meeting in Paris was attended by delegates from forty-two nations and the Bertillon method of nomenclature was again endorsed. It is claimed the reason is that the principles underlying the system are eminently sane. It forms a basis for mortality statistics, with a stable classification. This is achieved by utilizing the constant feature of disease; namely, the anatomic site of the disease. The terms used must be sufficiently ample to cover the various manifestations of diseases of a similar nature.

The principal change made in the scheme by the recent session was the division of Class I into two classes; i. e., I., Epidemic, Endemic and Infectious Diseases, and II., Other General Diseases. Acute Poliomyelitis, Epidemic Cerebro-spinal Meningitis and Lethargic Encephalitis were transferred to Class I from diseases of the Central Nervous System. Under Influenza a subdivision was made from pneumonic complication, and the classification of tuberculous complications was revised. Besides these changes a provision has been made for diseases of glandular origin. The classification now contains fifteen classes, divided into 186 members.

The change made by the recent session has brought some confusion into the ''causes of death'' given by physicians in the certificates. However, it is a simpler classification and when we get accustomed to it, will not be so difficult as the former requirement. It is necessary now that in the transcripts which are sent to Washington the address of the physician signing the death certificate be given and it would seem that it is Washington's plan to follow up from the transcripts the details in the certificates if such details have not been supplied, or can not be forwarded by the local state office after information is asked for. I mention this that you may further the educational propaganda necessary in order that the work of the State office and the National Bureau may be assisted and relieved of much follow-up work that now is done in all the states, Louisiana not excepted.

I need not state that birth certificates are equally as difficult to get complete as those of deaths, even more, because many of the birth certificates are made out by persons who do not realize, as physicians do, the need for all the data required. Generally our morbidity reports are more complete, but the morbidity records are not complete as to number and one of our plans now is inconvenient for the doctors, but it has brought up the epidemiology reports several hundred during the last two years. It is this, that epidemiology cards are checked with the death certificate and if there is not a card on file for the death certificate, then the physician is asked to kindly forward. These cards are franked. We can do this only with reference to the reportable diseases.

The great value of accurate vital statistics was emphasized in a recent article by the able Scandinavian Stouman. He is convinced that as conditions now stand, following the great war, we are approaching an era in which the prejudices of ignorance will be greatly lessened, or suppressed; one in which the old theories of life and of the welfare of human beings will no longer obtain and those which hitherto were considered idealistic will become actualities. I believe his viewpoint correct and, further, I believe that the advancement in the betterment of living conditions can be brought about only by an accurate knowledge of the conditions under which people live. This is to be obtained through the compilation and correlation of statistical data and through the conclusions resulting therefrom.

We have seen changes in the life and manner of living in our state and our country. Some of these changes had not been thought possible by the most optimistic of reformers for years to come. They were made feasible—imperative—by the stress of unforeseen conditions. Prohibition and the abolition of prostitution became facts. How many of us in 1916 would have believed that these would have been supported by a majority of our people? It is not purely optimism which assumes the control and ultimate eradication of malaria, hookworm, typhoid fever and tuberculosis.

Since the population of a country is the chief element in the fabric of social economy, it behooves governments, central and local, to gain a more accurate knowledge of its biology; that is, of the factors which control the health, life and death of the people. Such knowledge can be had only by the collection and systematic analysis of statistics. These data should be so organized as to be of local and national character. In fact, they must be interntional. This has been recognized for many years. The recommendation of the Medical Board of the League of Red Cross Societies at Geneva is that an international reporting must be international. This has been recognized for many years. form be drafted. With these records, the distribution of man and his relation to food supply and the forces which tend to improve or to impair the races can be studied and encouraged or mitigated as the case may be. This work of the League committee naturally falls under the head of demography or vital statistics.

The attempt on the part of nations to reach a basis of common agreement on the important question of statistics, and especially as to the terms for expressing disease conditions, make us realize the tremendous part that vital statistics play in the development of higher progress. It is a science yet in its beginning and most important for the general welfare of any of the sciences that imply social development and improvement, not only for one race but for the races of the world.

NEEDED HYGIENE.*

By MAUD LOEBER, A. B., M. A., M. D.,

Instructor in Pediatrics, Tulane University School of Medicine.

At last the public conscience has been awakened to preventive medicine and preventive social service, although it is rather humiliating to acknowledge that we in Louisiana should have been among the laggards in the march.

The findings of the army health examination, have opened the eyes of more than one group of workers in preventive work, and not the least of these is the pediatrician.

It is incumbent on the physician as guardian of health to acquaint the public with facts and suggest such measures as will make for the ultimate betterment of the race. It is our good fortune to have as our special guardian care the most profitable material to work with, the immature, the growing, and the future generation will have praise or blame for us according as our handiwork is done.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

In looking over the volume "Defects found in Drafted Men"(1) issued by War Department, 1920, a most gigantic and formidable looking tome, I gathered a few of the statistics, which, in my humble judgment, I thought could be profitably applied to preventive medical social measures. The data I have limited to those conditions pertaining solely to Louisiana, as perhaps pertinent to us.

In looking over the section on "Distribution of Defects by States" under Louisiana,,(1) we find this comment: "this low-lying agricultural state, through which runs the Mississippi river and its river bottoms is divided into three sectons. Section two contains the City of New Orleans, section one includes the Mississippi bottoms, outside of New Orleans, and some of the uplands in the Northwestern part of the state, together with St. Mary's County, having altogether 63% negro population. Section three includes the remainder of the state, with a negro population of about 34%. These sections may be brieflly concentrated in respect to the diseases and defects found. Tuberculosis is commonest in New Orleans and next in the negro section. Venereal diseases are commonest in the rural negro section. For the rest, the defects that are commonest in New Orleans are simple and exophthalmic goitre, defective vision, and strabismus, cataract, blindness in both eyes, otitis media, and perforated ear drums, defective hearing, hypertrophic tonsilitis, various valvular diseases of the heart, asthma, defective and deficient teeth, hernia and enlarged inguinal rings, loss of lower extremity, hammertoe, hallux valgus, flatfoot, and other foot defects, defective physical development, deficient chest measurements, underweight, and under height. The following defects are commoner in the negro section: Pulmonary tuberculosis is commoner than in the white section but not so common as in New Orleans. Venereal diseases exceed those of any other section; also arthritis, amblyopia, choroiditis, hydrocele, other non-venereal diseases of the genito-urinary system, fibrous ankylosis of joint, loss of one or more fingers. An excessive proportion of the following defects was found in section three, prevailingly white; curvature of the spine, epilepsy, mental deficiency, trachoma, enucleation of the eye, and blindness in one eye, tachycardia and other functional heart disorders, mal-union of fracture of lower extremity, shortening of lower extremity, loss of whole or part of upper extremity, deformities of hand, resulting from injury or infection, and general unfitness for military service. In sum, there was the largest proportion of defects in the City of New Orleans (627 per thousand) men examined, next in the rural white section (502 per thousand) and least in the negro section (496 per thousand).''

Here, then, is our problem in a nutshell. How many of these defects are directly traceable to neglect in childhood, and what is the best method for attacking the problem so that we will not have a repetition of these preventable defects in the next genration.

Surely we can endeavor to eliminate, or at least minimize the number of defects which we are pleased to regard as preventable—through proper education of the parents, or those who have large groups of children under their care; and to that end the greatest good can be accomplished when the physician takes an interest in social welfare work, and co-operates with the parents and guardians by his instructions to these two groups.

Too little attention has hitherto been given to the problem of welfare work from the point of view of the social worker. True we have the Health Boards with us whose aim, as defined by A. J. McLoughlin(2) ''should be the eradication of preventable diseases, the elimination of corrigible physical and mental defects, and the maintenance of all individuals in the best possible physical and mental condition''. The Health Boards have stood for community health, but for the average physician to feel his share in community welfare, has been unusual. Of course we have a few notable exceptions. Dr. William Mayo(3) truly says: ''No group of men is brought into contact with people quite so intimately as the members of the medical profession, yet there is something about this very intimacy which seems to prevent medical men as a whole from understanding mass psychology.'' And again he says: ''the medical profession as a body is altruistic. Appeals for any purpose for human betterment are made to no class of citizens with greater certainty of ready response than to the medical profession.'' The physician today is probably called on more for community welfare work than ever before, and with the better and fuller education of the public along the lines of health, the demand for the physician with social experience will become greater and he will be, as he should be, the logical leader in such movements.

When the doctors realize their relation to the community welfare, there will be better co-operation of the doctors among themselves and with social agencies: moreover, those agencies whose work is among the various social groups—normal group, dependent group, delinquent group or feeble minded group—all need the specialized training of the physician who first of all can classify the children mentally and physically, separate the wheat from the chaff, and then by further differentiating the normal from the abnormal can save these organizations keen disappointments in hopes they falsely placed in prophesying brilliant futures for their charges, when the individuals thus considered are mentally, physically, or morally incapable of fulfilling the prophesies.

Proper classification, suggestions, and well directed training suitable for the individual child, as outlined by a physician, will undoubtedly make for better citizens. With the decks cleared of the handicaps how much greater would be the advancement in standards, mental, physical and moral of the normal individuals. It is for the benefit of these normals primarily that we should direct our best efforts. Dr. McCormick(4) in speaking of medical inspection of school children, in discussion at the Southern Medical Society last year, said: ''We are multiplying statistics and what we need is to multiply health. And our malnutrition classes are worthless if we are going to say that every child has malnutrition that has physical defects.'' We might make a very good application of the same sentiment right here. Salvage the defective but do not lose sight of the care of the normal. Stress those things which make for normalcy, preventing those conditions which maim him, stunt him, in any or all directions, and tend to throw him out of the class of life's keen competition because of some handicap which at one time was preventable.

The day of specialists has been great, but the old family doctor may indeed be of vast service to us, especially in those sections removed from medical centres. The general practitioner must be prepared to care for the specialties in so far as he is capable. He should, however, recognize his limits in order that he may seek further advice so that his patient will be properly and efficiently cared for no matter how remote the section may be. We do expect and do find community or group medicine and community and group social service advancing steadily and rapidly. How are our universities meeting this public demand for physicians having the social group outlook? Many colleges, it is true, have special courses leading to the degree of ''Doctor of Public Health'' or, as the Harvard Medical School confers the degree of: ''Doctor of Medical Science'', yet there is no uniformity existing for the work which is indicated by the title, ''D. P. H.'' A cursory glance at the report of the Committee of Sixteen on: ''The Standardization of Public Health Training.''(5) gives a résumé of the colleges conferring degrees for such training and the requirements of each for obtaining the same as well as the recommendations they deem necessary: it will be seen by this report that at present but few colleges confer such degrees and the requirements have no uniformity whatever, each college requiring or accepting its arbitrary standards.

Most of us, however, who are not particularly stressing specialization in public health toward the end of securing a degree therein, feel, nevertheless, the importance of having the physician in our special field of pediatrics oriented with the larger work and putting it in its proper place of preventive medical social welfare work. We think that the physicians today are being called upon to help solve the problems of welfare work and it is only right and just that we should give the student of medicine assistance to aid him in solving the difficulties.

To that end, the Department of Pediatrics of Tulane University has endeavored this year, to give the students a broader vision than the one obtained solely by diagnoses and treatment of diseases of infancy and childhood, and considered a few of the agencies which are primarily child caring in character, and stress those things which make for better standards socially, physically, mentally and morally. When brought home to the student in concrete form, sanitation, milk supply, including the grading of milk, the menace of carriers, whether typhoid, diphtheria, parasitic, including malarial or what not assume a different aspect. The children who are handled in groups, be they of the school, day nursery, asylum, court, reformatory, or whatever character are hardly thought of as existing by the average medical student, but become at once a vital factor when looked at in this larger scheme and every individual who comes under his care receives perhaps unconsciously his estimate as to the value of the child in its relation to the community as a whole and in its relation to the various subjects stressed, namely: milk supply, better baby contests, child welfare, school or institutional inspection, and his estimated value is placed upon him as to his becoming an asset or liability, potential or real, to the community.

The department feels it a duty to acquaint the future pediatrician with the advantages to be gained by better baby contests, the value of the public health nurse and public welfare nurse working with him for a better community, a knowledge, if possible first hand, of the various child caring institutions and the purpose for their existence, and the part they play in making for the betterment of the future citizen. Sooner or later the child under his care will need this special knowledge from him, and then the physician and the agency must unite for the benefit of the individual child. It is in behalf of this medical social hygiene that it behooves the pediatricians to give more thought and consideration and enlightment to the younger men entering the field.

It is astounding, to say the least, that in this day and generation so few of our child-caring institutions should practice even the rudiments of proper medical welfare. The children are all considered, thought of and treated collectively; no adequate systematic physical and mental examinations made, no routine or adequate social environmental or hereditary histories obtained. If the case is a marked physical, mental or moral deviation from the normal, the attending physician is consulted and the case gone over in most instances, only from the medical aspect. Is it a wonder that the great State of Louisiana should find itself awake to the menace of many defectives, not the least among them the feeble minded, and find that the community has no place to properly place them or segregate them? This is primarily a question of health and as physicians whose special work is among children it is incumbent upon this class of physicians to seek the amelioration of the exiting conditions, and the setting up of new standards for childhood in this State, and the stressing of social medical welfare in the education of the future physicians to the end that his duty in carrying out these standards will result in the development of the normal child to its greatest efficiency and the caring for the defective humanely, wisely, and with a care toward their prevention.

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DISCUSSION.

Dr. L. R. DeBuys, New Orleans: I have listened with a great deal of interest to this excellent paper of Dr. Loeber, which brings to us a message of our errors in the past. From the statistics which were gathered during the selective draft, we know what our shortcomings have been, and it is now important to arrange our work and educational propaganda as to help these individuals in every community. Where does this responsibility lie? It lies with us medical men and particularly with those of us who practice among children. We should first know the normal. We should then be able to recognize the subnormal and to isolate the defectives. The subnormals can be made normal, and they require a relatively small amount of assistance to become so. The defectives will never become normal, so that if we make a division between the defective and subnormal and give the proper attention to the potentially good citizens, we can ultimately have a larger percentage of good citizens. This wave of education which had a tremendous stimulus during the war is continuing to a greater or lesser extent in some localities. However, it is going to continue and going to become greater in time, and it behooves us physicians to so inform ourselves so as to be able to take part in the direction of the work.

We have inaugurated this year in the pediatric department of the School of Medicine of Tulane University courses in child hygiene because we believe the well rounded physician is going to be the successful man in every community. At least, he should be looked upon as the leader and adviser in all constructive health work.

Dr. Rena Crawford, New Orleans: I have been very much impressed with what Dr. Loeber and Dr. DeBuys have said about the normal child. To keep the child normal and raise the subnormal to the normal is a great problem. We have been engaged in child welfare work for several months, and the problem for the doctor is to find the subnormal child. The mother does not know her child is subnormal. The child stays at home and is not recognized as a sick child, until it is too late for the doctor to bring it to normal. What we need is trained nurses or trained social workers to go out and teach these mothers what their children need or teach them to take their children to a doctor.

Not long ago I had a child brought in looking like a typical marasmic child. I said to the mother, why did you wait so long before bringing the child in. She replied: "The child is not sick; it is not vomiting; it has no diarrhea, but I brought it because the nurse told me to do so." The great lesson for mothers to be taught is that a doctor is needed before the child gets sick. Some mothers take their children to a pediatrician early, while others never go until the children are extremely ill, or when they get an acute attack. In the meantime, these children have been badly treated.

DIAGNOSIS AND SUSCEPTIBILITY IN HAYFEVER.*

By WM. SCHEPPEGRELL, A. M., M. D., New Orleans.

Diagnosis. The symptoms of hayfever in the early stages resemble those of an incipient coryza, for which it is frequently mistaken. It is attended with sneezing, and congestion of the nostrils due to the swollen mucous membranes resulting from irritation of the vasodilators, and with a free serous nasal discharge from overstimulation of the parasympathetic system. Occasionally there is a slight elevation of temperature, but this, however, is frequently subnormal. There is itching of the inner canthi of the eyes and of the roof of the mouth in the region of the soft palate. The difficulty of nasal breathing, which is usually present, is aggravated when the patient is in the recumbent position, and less when exercising. Unlike an ordinary coryza, however, the discharge remains thin and serous, but may become muco-purulent towards the termination of the attack.

There is usually marked vaso-motor paresis causing turgescense of the turbinates which, in many cases, is the most annoying feature of the disease. When this is present in both nostrils, which is frequently the case especially at night, it necessitates mouth-breathing resulting in dryness of the mouth and throat. Even when the turgescense is only in one nostril, it frequently causes a distressing pressure which is sometimes referred to the affected side of the head.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

An itching sensation of the soft palate is a common symptom, which the patients usually try to relieve by rubbing with the tongue. Less common symptoms are itching of the face, especially of the nose, and of other parts of the body. Occasionally, the skin irritation may be the predominating feature in the disease, as in the case reported by Louis Hannah, in which a dermatitis was present on the body, back and limbs, which were covered by minute papules, erythema, tumefaction and vesiculation. It was associated with exposure to the ragweed pollen, responded to the intradermal test, and was relieved by the injection of the pollen extract.

There is usually considerable general depression, which is due to the abnormal temperature, the discomfort of breathing, and the effects of the absorbed pollen proteins on the system generally. Many of these cases are complicated with asthma, which increases the suffering of the patient.

Relief is experienced when the supply of pollen from any cause is diminished or disappears, as after a frost or on a sea voyage. A continued rain, by precipitating the pollen from the air, affords relief, and an absence of wind, or one blowing the pollen away from the patient, gives temporary relief.

The severity of hayfever during any particular season depends upon (1) climatic conditions, causing an abundance of hayfever pollen producing plants, (2) meteorologic conditions, as the prevalence of high winds during the hayfever season which aggravates the symptoms by increasing the supply of atmospheric hayfever pollens, and (3) upon the extent to which the hayfever weeds have been destroyed. These facts have been corroborated by the records of our atmospheric-pollen plate stations.

In spite of the greater increase in medical knowledge, many cases of hayfever are still mistaken for ordinary colds. The symptoms described above and their recurrence at certain periods of the year should simplify the diagnosis, which may be confirmed by the intradermal test.

Hayfever is frequently not recognized, especially in families in which there are no other members affected by the disease. It is quite common to have patients report that they have suffered several seasons with the disease, until finally its periodic recurrence suggests the probability of hayfever.

The diagnostic test should always be made in order to verify the diagnosis, and to determine the pollen or pollens to which the patient is sensitive. The selection of these is simplified by our classification from a biological standpoint of the principal hayfever pollens into four groups, viz: (1) Ambrosiaceæ (ragweeds), (2) Gramineæ (grasses), (3) Artemisia (wormwoods) and (4) Chenopodiaceæ (amaranths, chenopods and docks). While these groups do not include certain hayfever pollens found in special localities, as for instance those of the mountain cedar, *Sabina sabinoida,* in Northern Texas, the Western Cottonwood, *Populus sargentii,* in Dakota, Arizona and Nebraska, etc., still they include 90% of the known hayfever pollens, and therefore greatly simplify the diagnostic tests. These are limited to the pollens to which the patient is exposed, as shown by the botanical distribution of the hayfever plants in the locality in which the patient lives (radius of 5 miles).

The Artemisia group, for instance, is not found in the Eastern and Southern States, and it is therefore unnecessary in this section, to test the reaction of the patient to these pollens. The tests should therefore be limited to the ragweed, grasses and chenopodium groups. During the active hayfever season, the presence of the prevailing hayfever pollens is demonstrated by the atmospheric-pollen plates.

The tests of the patient's reaction to the hayfever pollens are the following: (1) Nasal, (2) ophthalmic, (3) cutaneous and (4) intradermal.

In the *nasal test,* some of the pollen is applied directly to the nasal mucosa. This may be done by means of a pledget of cotton or the patient may inhale the pollen directly from the flower (inflorescence). This method is crude and should never be used during the hayfever season, as it may lower the patient's normal resistance to the pollens.

In the *ophthalmic test,* a drop of pollen extract, containing 5 units of the pollen extract (one drop of the 100 units to the C. C.), is instilled into the conjunctival sac. The reaction is indicated by injection of the surrounding membranes. It is difficult with this test to determine the degree of the patient's susceptibility, and it is, moreover, inapplicable during the hayfever season when the patient's eyes are usually already irritated (conjunctivitis).

In the *cutaneous test*, the skin of the forearm is first scarified and the pollen extract (one drop of the 100 or 1000 units to the C. C.) is applied. This method can be used at any season, but lacks the accuracy of the intradermal test, and is also unreliable as regards the degree of the patient's susceptibility to the pollen.

In the *intradermal test*, five units of the pollen extract (0.05 C. C. of the 100 units to the C. C.) are injected into (not under) the skin of the forearm. In positive reaction, an urticarial wheal surrounded by a circle of hyperaemia, develops in 15 minutes. The degree of sensitiveness of the patient to the pollen is indicated by the size of the wheal, which varies from 0.3 to 2.5 centimeters in diameter and by the degree of the surrounding hyperaemia. In most cases, two tests, as for instance of the grass and of the ragweed pollens, are made at one time, so that the reaction may be compared.

The injection should be made with the usual precautions regarding asepsis. Alcohol is used for sterilizing the skin of the patient, as the stain of iodine obscures the appearance of the reaction. In thousands of tests, there has been no case of infection and no unpleasant reactions from our use of the pollen extracts.

Non-Infectiousness. In the general search for the microbic origin of disease generally, it was also supposed that this was the case with hayfever. A careful study of its etiology has shown this to be without foundation.

This being the case, hayfever is therefore not an infectious disease. This is a matter of some importance, as the physician is frequently asked regarding the communicability of hayfever, especially as it is not uncommon for several members of a family to be affected by this disease. Hayfever is a sensitization to pollen protein, and not an infection by microorganisms, which may multiply and be transmitted to others.

Many of the text books also state that there is present in hayfever patients some neuropathic condition which makes them susceptible to hayfever. While patients during an attack of hayfever, are usually nervous, partly owing to the constitutional effect of the disease and partly to the prolonged annoyance and irritation, a careful analysis of over 1000 patients fails to show any unusual degree of neurotic manifestations in these cases.

The statement that persons of superior education, and with the higher nervous temperament incident to modern life, are more liable to hayfever is also without foundation. It is as common among the poor and uneducated who visit our hayfever clinic at the Charity Hospital as it is among the educated classes. The belief that persons living in the country are not susceptible to hayfever has also been disproved by the Questionnaire of the United States Public Health Service in Louisiana (June, 1916) which showed that in the state farmers were as a class the most frequent sufferers from hayfever.

Susceptibility. If the normal equilibrium of the subject is not disturbed by the absorbed proteins of inhaled pollens, there is no clinical evidence of hayfever although the pollens may be inhaled in large numbers. In visiting a locality in which there are large numbers of hayfever plants, while the majority of persons are entirely unaware of any unusual conditions, hayfever subjects are affected in different degrees by the pollens in the air. This is also indicated by the intradermal diagnostic tests.

It is evident, therefore, that there is a wide difference in the degree of susceptibility of different individuals to the pollens. The question is, what are the limits of this susceptibility?

The difficulty in deciding this is due to the fact that specific susceptibility may exist indefinitely without developing hayfever by reason of insufficient exposure to the hayfever pollens. In order to understand this more fully we must consider the question of immunity to hayfever. As in the case of infectious diseases, it has not been definitely decided whether immunity is ever absolute or is only relative.

As an illustration that even great normal resistance may be overcome by great exposure, the following cases, which occurred at Hendersonville, in the mountain region of Western North Carolina (elevation 2,350 feet) are instructive. The natives of this section are rarely subject to hayfever; in fact, the general opinion is that they are immune. Two farm laborers, aged 43 and 25, respectively, were stripping corn for fodder during the month of September. Adjoining the field and to windward was a large quantity of ragweed, *Ambrosia elatior,* the pollen of which blew like dust over the field so that the corn was stained yellow. The same evening both men developed typical attacks of hayfever with marked symptoms lasting forty-eight hours.

These patients evidently had so high a resistance that, until the age of 43 and 25, respectively, they were considered immune, but nevertheless developed severe attacks of hayfever after this extraordinary exposure.

As a result of this variation in the degree of susceptibility, all hayfever subjects, even in the same locality, do not suffer from their attacks at the same time. Some patients with a low susceptibility, have hayfever only when the pollens are in great abundance in the air, so that they have only a few attacks during the season. Others, with a high susceptibility, suffer in various degrees during the whole of the pollinating season of the plants to whose pollens they are sensitive.

An attack of hayfever not only does not develop immunity but hypersensitiveness (allergy) due to the decreased resistance, resembling, in this respect, the infection with such organisms as the influenza bacillus, pneumococcus, streptococcus and staphylococcus.

It is quite common that a patient, who has not previously suffered from hayfever, visits the country when there are large numbers of hayfever pollen in the air, and not only falls a victim to the disease, but develops a sensitization that afterwards causes him to suffer from hayfever in the city where heretofore he had apparently been immune. Presuming that the daily average number of pollen in the city was 25 per kiloliter of air, and in the country 60, he had formerly a resistance that could negotiate the absorption of 25 pollens per kiloliter, but after developing hay fever from exposure to 60 pollens per kiloliter, his resistance was lowered so that 25 pollens per kiloliter are now sufficient to cause hayfever. This explains why persons of 40 or more years of age sometimes develop attacks of hayfever in localities where formerly they were apparently immune.

The susceptibility of hayfever subjects varies within considerable limits, not only in the degree of the reaction, but also in their reaction to different pollens. The majority of hayfever subjects in the Eastern and Southern States are sensitive to the pollen of the ragweeds, and not to that of the grasses (fall hayfever.) A smaller number is sensitive to the pollen of the grasses, but not to that of the ragweeds (spring hayfever). Others are sensitive to the pollens of both ragweeds and the grasses (spring-fall hayfever), while certain cases (8 per cent.) are sensitive not only to these pollens but also to those of other plants and trees, so that they may suffer from hayfever attacks during the greater portion of the year (perennial form).

Heredity in Hayfever. The influence of heredity in hayfever has been the subject of considerable discussion, most writers, however, admitting its effect. In order to determine this relation, we have made analysis of a series of 1,000 cases treated in the Hayfever Clinic of the Charity Hospital and in private practice. This shows that over one-third of the cases (37%) had relatives of the first degree (father, mother, sister or brother) who suffered from hayfever.

The exact proportion, however, is probably higher than this, as specific susceptibility may exist indefinitely without developing hayfever, by reason of insufficient exposure to the hayfever pollens.

In order to understand this more clearly, we must consider the question of immunity to hayfever. As in the case of infectious diseases, it has not been definitely decided whether immunity is ever absolute or is only relative. The fact that 26% of the cases of this series developed hayfever as late as from 40 to 50 years, and 8% between 40 and 50 years, would indicate that this is relative at least in many cases.

In order to understand the development of hayfever at a late age, we must remember that one attack of hayfever lowers the relative immunity of the patient to hayfever, not only for an indefinite period, but probably also, unless artificially raised, for the remainder of his life.

This principle is illustrated by the following case, which is one of many similar cases: This patient had lived in Louisiana for 42 years without developing hayfever, although his brother suffered from this disease. Fifteen years ago he spent a summer in Western North Carolina and developed hayfever. He returned to Louisiana, but has continued to have hayfever every fall since this visit.

The explanation of this is that there is almost twice as much atmospheric ragweed pollens in Western North Carolina as in Louisiana during the month of September, as shown by our pollenometric records. Assuming that this patient's relative immunity was 50%, this was not sufficient to resist the exposure to the large amount of pollen inhaled during his visit to North Carolina. This attack, however, lowered his resistance, to probably 35% relative immunity. This was no longer sufficient to resist his exposure to the atmospheric ragweed pollen in Louisiana, so that he continued to suffer from hayfever.

It is not necessary to travel any considerable distance to lower the relative immunity as in this instance. One of our patients, a woman of 40, lived for one season in a suburb of New Orleans where there was a large quantity of wild grass, and developed hayfever of the grass-pollen form. The following year, she moved back to the central portion of the city, where formerly she had been without hayfever, but nevertheless continued to have attacks each season. In this case also, the patient's relative immunity had been lowered by the first season's attack resulting from greater exposure to the grass pollens.

Hayfever and Asthma. The tendency of hayfever to develop asthma is well known. It is usually a later complication, although sometimes it is the first and, occasionally, the only symptoms of this disease. In the series of 1,000 cases, fifty-three per cent. suffered from asthma during some portion of the season. Although this is a higher ratio than has been heretofore recognized in hayfever, the probability is that the proportion is still higher. There are many cases in which the nasal symptoms of hayfever are so mild and of such short duration, that the patient recognized only the asthma from which he is suffering. In addition to this, there are also cases of asthma, due to pollen sensitization, in which the nasal symptoms are apparently entirely absent, and therefore its relation to hayfever unrecognized.

In view of this, all cases of asthma, especially those occurring during the usual hayfever season, should be tested with the extracts of the atmospheric pollens to which the patient is exposed. Our experience has shown that the number of asthmatic patients giving positive reactions to the pollens, especially of the grasses and ragweed, is quite high. This diagnostic test is therefore important, especially in view of our experience that these cases not only responded favorably to the immunizing hayfever therapy, but that the number of seasonal cures and improvements equals those of the uncomplicated form of hayfever.

Atypical Forms of Sensitization. There are also occasional atypical forms of hayfever and asthma due to the inhalation of the dandruff protein of horses and other animals. Also in which the attacks are caused by the dust protein of coffee, flour and similar material. These, in the aggregate, form but a small percentage of the total number of hayfever cases, and are usually due to preventable causes. In our Series of 1,000 cases, there were only seven such cases reported, or .7 of one per cent. The protein of certain articles of food may also be responsible for occasional cases. In the diagnostic tests for perennial cases of hayfever, however, the possibility of these forms of reaction should be carefully considered. Cases due to the odors of flowers are not true hayfever, but reflex disturbances from the olfactory nerve

DISCUSSION.

Dr. A. I. Weil, New Orleans: Hay fever is a large and important subject in New Orleans, but there is a great group of conditions that are stuck together under the name of hay fever, whereas only a small proportion of these conditions are true hay fever. It is well to bear that in mind, as otherwise there will be considerable confusion as to hay fever and other conditions.

A great many people suffer from what is known as vasomotor rhinitis without being susceptible to the pollen. We know the nasal mucous membranes of certain persons react to any sort of nasal irritation. We have seen patients who will tell us, and it is true, that they do not suffer from hay fever, but as soon as these people get on a train and there is irritation of the nasal passages by the smoke and cinders they develop all the symptoms of hay fever which symptoms continue until they leave the train. A number of people suffer from horse asthma and stable asthma which is a typical form of hay fever. True hay fever is a disease which is dependent upon three distinct factors. Some one has said that hay fever is like a three-legged stool, and if you knock out one of the legs of the stool it will not stand. If you can do away with one of the three causative factors in hay fever you knock out the disease, and the three legs of this stool may be roughly mentioned as follows: In the first place, the patient must have a hypersensitive nasal mucous membrane; in the second place, there must be a nervous tendency because no patient has hay fever unless he is of a neurotic type. In the third place, there must be some irritating substance in the nose. In true hay fever this substance is pollen. In the other forms of hay fever it may be smoke or cinders from a train, emanations from a stable, or certain flowers in so-called rose fever, but if we can knock out one of the legs of the stool we have knocked out the hay fever. The neurotic tendency cannot be knocked out. The irritating substance can be knocked out if it happens to be a substance of some specific pollen which can be determined and the patient desensitized. In a number of cases in which there is no specific pollen as the cause of the disease we cannot do away with the neurotic tendency, but we can in certain cases do away with the hypersensitive nasal mucous membrane, by removing septal spurs, polypi, deflected septum or other intra-nasal abnormalities, not forgetting chronic sinus disease. In this way we can do away with the disease.

Dr. F. C. Ewing, Alexandria: I have been much interested in Dr. Scheppegrell's paper. Dr. Weil has given us a lucid description of the classical three-legged stool upon which hay fever is based. But personally I have recognized for years that people have colds at certain seasons of the year. I believe these summer colds are just as surely hay fever as so-called scarlatina is identical with scarlet fever. I believe we can have such mild evidence of almost any disease in this world as to be almost imperceptible in certain individuals, while in other people we see the most fulminating form of the disease. I have been a sufferer of hay fever for thirty years. I would sneeze on the slightest provocation. I went to Manitou Springs, Col., from St. Louis, above where the pollens usually are found, where hay fever was supposed to be unknown, and I developed it. I then went to California and to British Columbia, where it disappeared, and as the years have gone by my hay fever has grown much less, and when I came down here and was in the Army I never had it at all; at any rate, I had it much less than before. Yet all the pollens of St. Louis, my former home, are here in Louisiana.

We must remember that there is a certain amount of hay fever that is psychologic. You are doubtless familiar with the classical description of John N. Mackenzie of the old lady who seeing a bunch of roses began to sneeze.

Dr. Scheppegrell is a distinguished authority on this subject. He has classified the different plants and conditions that are claimed to be causes of hay fever, and personally I have had no experience in these things. I have been in the Army for a number of years, and I have never found anything that would do my nose any good. Dr. M. A. Goldstein, of St. Louis, with whom Dr. Scheppegrell and I were associated with for years as co-editors of **The Laryngoscope**, felt that my nose was different from all others, and I am surprised that I did anybody any good.

I have not had any results from the use of any of these pollens. I think what the dying Hamlet said to Horatio is applicable to hay fever, namely, "Horatio, there are more things in Heaven and earth than are dreamed of in your philosophy." Hay fever is still one of the mysteries.

Dr. W. Scheppegrell, New Orleans, (closing): If Dr. Ewing will visit our Hay Fever Clinic, he will see that modern investigations have eliminated hay fever from the list of mysterious diseases. These cases, which include many physicians, will illustrate the benefits of immunizing methods.

Regarding Dr. Weil's statement that hay fever is dependent upon three factors, "a nervous predisposition, abnormal nostrils, and a local irritant," this theory has long since become obsolete. One of our most severe cases is an athlete of over 200 pounds. abnormal nostrils are not more common among hay fever subjects than in others, and pollen is not an irritant, but causes hay fever through the defective parenteric absorption of its protein.

One of the reasons for skepticism regarding the immunizing of hay fever is due to defective methods of administration. Recently a physician complained of failure in the treatment of a case of spring hay fever, when it was shown that he was using the extract of ragweed pollen, which is not responsible for spring hay fever. Hay fever is due to different kinds of pollen, and reliable results can be expected only by finding the incriminating pollen by means of a diagnostic test, and then applying the proper immunizing treatment.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By P. T. TALBOT, M. D., Secretary-Treasurer.

As Chairman of the Committee on Scientific Work, with the request of our President, I wish to announce the following Chairmen for the Scientific Sections for the approaching meeting of the Louisiana State Medical Society, to be held in Alexandria, La., April 11, 12, 13, 1922:

Section on Medicine & Therapeutics, Dr. Hamilton P. Jones, Chairman, New Orleans.

Section on Pediatrics, Dr. John Signorelli, Chairman, New Orleans.

Section on Nervous Diseases, Dr. C. S. Holbrook, Chairman, New Orleans.

Section on Bacteriology & Pathology, Dr. G. H. Hauser, Chairman, New Orleans.

Section on Pub. Health & Sanitation, Dr. B. A. Ledbetter, Chairman, New Orleans.

Section on General Surgery, Dr. J. L. Adams, Chairman, Monroe.

Section on Gynecology & Obstetrics, Dr. J. I. Peters, Chairman, Alexandria.

Section on Eye, Ear, Nose and Throat, including Stomatology, Dr. C. A. Weis, Chairman, Baton Rouge.

Section on Urology, Dr. I. B. Rougon, Chairman, Shreveport.

Section on Dermatology, Dr. C. B. Erickson, Chairman, Shreveport.

Section on Radiology, Dr. S. C. Barrow, Chairman, Shreveport.

Members of the State Medical Society who desire to present papers at this meeting should get in touch with the respective chairman, as promptly as possible.

We are taking this opportunity of making an early announcement of the various Chairmen of Scientific Sections, in order that we may not be handicapped in the final formulation of our Scientific Program, as has been the case in past meetings. We would earnestly urge all who are interested to "get busy" at once, that their names may be properly registered with the Chairman of the Section.

For the benefit of all concerned I wish to quote the following from the minutes of the annual meeting, 1921:

> "The second recommendation contained in the President's report that there be only two sections, namely, SURGERY and MEDICINE, was considered.
>
> "Dr. Knighton moved that this recommendation be adopted. Seconded and carried."

As you will understand this provides for a Scientific Program under two divisions, i. e., MEDICAL and SURGICAL. All papers will be arranged under these two headings, with no separate identity. Papers on practice of medicine and allied specialties, will be interspersed under one general title of "MEDICINE". Likewise on surgery and allied specialties under the general title of "SURGERY". The various Chairmen of Sections will function as in the past.

The House of Delegates anticipated that this would give better satisfaction to all and thus incite more interest in our Scientific program, than has been manifested in some sections in the past. The exact arrangement of the program, along these details, will be worked out very shortly, by the Committee on Scientific Work, and will be announced as promptly as possible.

For the assistance and guidance of the Chairmen of Scientific Sections, I wish to quote the following from our by-laws:

Section on Medicine & Therapeutics	10 papers.
Section on Pediatrics	3 papers.
Section on Nervous Diseases	3 papers.
Section on Bacteriology & Pathology	3 papers
Section on Pub. Health & Sanitation	5 papers.
Section on General Surgery	10 papers.
Section on Gynecology & Obstetrics	4 papers.
Section on Eye, Ear, Nose & Throat	5 papers.
Section on Urology	2 papers.
Section on Dermatology	2 papers.
Section on Radiology	3 papers.

Conference—Parish Medical Society Secretaries.

At the last meeting of the Executive Committee upon recommendation of the Secretary-Treasurer, it was proposed, at some future time, to hold an annual meeting of the secretaries of the various Parish Medical Societies.

This was deemed advisable on the grounds that it would bring in close contact the various men who are actively interested in "organized medicine" and especially their local societies. The Secretaries could thus "get together", know each other better and exchange ideas and suggestions for the betterment of their respective localities.

In this manner they will be better able to become actively in touch with the various functions and endeavors of the State Secretary-Treasurer's office and more familiar with the plans and ideals of the officers of the State Medical Society.

If it can be arranged consistently, we plan to have such a meeting at a time with a meeting of the Executive Committee. The plan would be more of a 'conference' between the various Parish Secretaries and Officers of the State Medical Society.

The Secretary-Treasurer of the State Society is very anxious to make such a meeting a success, in every detail, and of benefit to the various Parish Secretaries, which combined, will reflect with credit upon our organization in this State. You can therefore understand that we would not only "ask" but will welcome any suggestions from our Officers and local Secretaries, along lines which might appear of interest and value towards making such a meeting what we desire. Some of the important questions would be: WHEN WOULD SUCH A MEETING BE ADVISABLE? WHAT PLAN OF ACTION WOULD BE MOST EXPEDIENT AT THIS MEETING?

I wish to assure all of our Parish Society Secretaries that the Executive Committee of the State Medical Society is actively interested in this proposed meeting and each member of this Committee feels that great good and better understanding between our Officers and fellow-workers in the field, can be accomplished by such affiliation. We therefore ask every Secretary to help in any and every manner he might deem possible and consistent, and lend his suport to this new and all-important movement.

NEWS AND COMMENT.

FURTHER RECOGNITION WILL BE GIVEN TO FIVE-YEAR MEDICAL COLLEGES according to an official statement from the Conjoint Board of London announcing that students graduating from medical schools which have adopted the fifth year of the curriculum (intern year) *before* granting the degree of Doctor of Medicine will be admitted to the final examinations of that Board without taking an additional year of study after graduation.

CRIPPLED CHILDREN TO BE CARED FOR BY SHRINERS. Nine free hospitals for crippled children will be erected by the Nobles of the Mystic Shrine throughout the United States and Canada. The sum of $2,000,000 has already been pledged for the purpose. St. Louis was to have been the site of an only hospital, but it was later resolved to ''bring the hospitals to the children'' and establish these institutions at such centrally located cities as Shreveport, San Francisco, Portland, Oregon, St. Paul, Minnesota, and to put one in Montreal, Canada, as well as in St. Louis. Locations for the other three will probably be in Virginia, the New England States and Central Pennsylvania.

NATIONAL BOARD OF MEDICAL EXAMINERS. The trial period of usefulness for this Board is just completed in the celebration of the fifth year of its existence. The establishment of a thorough test of fitness for the practice of medicine which could serve as a guide for medical licensure throughout the United States has been the chief aim of the Board and its principles have been accepted widely at home and abroad. The late Dr. W. L. Rodman of Philadelphia, organized the National Board of Medical Examiners in 1915, with the heads of the three Services of the War Department, Col. Louis A. Lagarde, retired Army officer and recently deceased, and representatives from various institutions connected with medical education through the country serving as co-workers. There has been such a large demand to secure the certificate of the Board by examination that the Carnegie Foundation has appropriated the sum of $100,000, over a period of five years, to assist the Board in its usefulness. At the annual meeting in June of this year, held in

Boston, the following officers were elected: M. W. Ireland, Surgeon General, President; J. S. Rodman, M. D., Secretary-Treasurer, and E. S. Elwood, Managing Director. It is planned to have Mr. Elwood visit medical schools in the A class during the present college year to further explain the examinations. Further information may be had by addressing the Secretary, Medical Arts Building, Philadelphia.

LEGAL LIABILITY FOR THE TRANSMISSION OF VENEREAL DISEASE and personal responsibility in such cases have now been upheld in several different phases both by civil and criminal courts in at least three states of the Union. Five years in the penetentiary were given to a man in Oklahoma for infecting a girl with syphilis. A doctor in Nebraska who warned a hotel keeper that one of his patients, a guest at the hotel, had a venereal disease for which he refused to be treated and was consequently a menace to public health, was upheld in his action. In North Carolina a woman was awarded $10,000 damages against her husband for a similar infection and the Supreme Court has upheld the judgment. The Nebraska case is important because it upholds the physician trying to protect the public health even though he violates his patient's confidence. The legal barrier preventing a wife from testifying against her husband is set aside in the North Carolina case and the decision therein makes it likely that marriage henceforth will be no adequate defense against a suit for transmitting infection. Twenty states have already adopted laws preventing persons with venereal diseases to marry.

CREMATION OF HUMAN BODIES. The Cremation Society of England reports that during 1920, 1800 bodies were cremated in Great Britain and that among the scientists whose bodies were cremated were those of Sir William Osler and Dr. Cecil Lyster.

THE NEW UNIVERSITY OF JERUSALEM will be built along the lines of the American institutions. American Jewish physicians have contributed $1,000,000 to build the medical college and an American surgeon assisted by an American staff will be in charge.

INCREASED DEMAND FOR RADIUM. According to the Chief Chemist of the Bureau of Mines, Mr. R. B. Moore, in a statement before the Engineering Foundation, Madame Curie's visit to

America seems to have increased the demand for radium and brought out a much more defined interest in this product. Mr. Moore states that the United States at present is producing more radium than all of the world together. Radium is found only in uranium ores and is formed by disintegration through atomic changes. Probably about 115 grammes of radium have been produced in the United States since 1913, while probably not more than 40 grammes have been recovered from foreign ores since its discovery."

IN HONOR OF GENERAL GORGAS. Last March a formal ceremony took place in Havana when the name of Virtudes Street, one of the principal and most popular thoroughfares of the Cuban metropolis, was changed to Gorgas Street, or *Calle General Gorgas.* The ceremony consisted in the unveiling of a new street sign, which was put up to replace the old sign, and was done on a Sunday morning in the presence of the local authorities and diplomatic corps. An oration was delivered by Dr. Lopez del Valle, the health officer of the city and an old friend of General Gorgas, whose successor he became.

HAITI HAS NEW VACCINATION LAW which requires that the doctor or other person attending the birth of a child shall have such child vaccinated within one to three months after birth. The National Public Health Service will provide free vaccination as well as the hospitals and dispensaries subsidized by the State. Those successfully vaccinated will be supplied with certificates, as also those who have been vaccinated six times without success. Every seven years the vaccination must be repeated.

PROFESSOR A. LORENZ, noted scientist and physician, expects to pay a visit to America in December, in appreciation of what America has done for the children of Vienna, and will offer his personal services to the children of poor parents who may thus have the benefit of his surgical help.

RESEARCH WORK IN THE SEROTHERAPY OF SLEEPING SICKNESS is to be undertaken through the Colonial Office of Great Britain which is organizing an expedition for this purpose, to include both men and animals, with plans for a two years stay in Africa. The expedition will be in charge of Drs. Marshall and Basselo, of the Uganda Public Health Service, with two assistant physicians and two veterinarians.

PERSONALS: Dr. Simon Flexner, the Director of the Rockefeller Institute for Medical Research, was selected honorary foreign member of the *Académie Royale de Médecine* in Brussels.

Dr. A. D. Bevan, former President of the A. M. A., has been made an officer of the Legion of Honor for services rendered to medical science and education during the war.

The following members of the New Orleans profession attended the Clinical Congress of North American Surgeons held in Philadelphia October 24: Drs. C. J. Miller, E. D. Fenner, Urban Maes, L. H. Landry, J. F. Dicks, T. B. Sellers and F. W. Parham. Dr. J. L. Wilson of Alexandria also attended.

Dr. Marcus Feingold attended the meeting of the American Academy of Ophthalmology and Oto-Laryngology held in Philadephia on October 17.

Dr. C. C. Bass attended the conference of the Mississippi State Health Officers, at Jackson during the past month.

Dr. Urban Maes addressed the combined meeting of the Harrison and Stone Counties Medical Societies at Gulfport, Mississippi, on November 2.

Dr. L. R. DeBuys attended the meeting of the Central States Pediatric Society during the past month, at Cleveland, Ohio.

Dr. George Walter has been appointed pathologist and roentgenologist at the St. Francis Sanatorium, Monroe, succeeding Dr. John Beals.

Dr. Lewis C. Spencer announces his new location in Shreveport, La., his practice to be limited to orthopedic surgery.

REMOVALS: Dr. Joseph D. Weis from 1448 Jackson Avenue to 4704 St. Charles Avenue, New Orleans.

Dr. E. L. Leckert, from 311 Macheca Building to the 4th floor of the Cusachs Building, New Orleans.

Dr. Ada Schwing Kiblinger, from Marksville, to 503 Medical Building, New Orleans.

Dr. T. T. Batson, from 2117 Tulane Avenue, New Orleans, to 206 Carter Building, Hattiesburg, Miss.

DIED: Dr. B. I. Paul, at Cedar Grove, Louisiana, on October 30, 1921.

At Monroe, Louisiana, Dr. Epsy M. Williams, aged 41 years, on October 19, 1921.

BOOK REVIEWS AND NOTICES.

Text-Book of Embryology, by C. W. Prentiss; revised and rewritten by Leslie B. Arey. W. B. Saunders Co., Philadelphia, 1920.

The last edition of this work, which from its first appearance, in 1915, has met with wide approval as a text for courses in embryology, retains the plan and scope of the first edition. However, for the last two editions Professor Arey has rewritten the material and added both to subject matter and illustrations; changes in the third edition are not marked. After discussions of general embryology (germ cells, cleavage and formation of germ layers) there are systematic descriptions of chick and pig embryos of graded stages, useful in that they furnish guides to parallel study of actual embryos in the laboratory, human embryos being not available in quantity sufficient to furnish classes. To this extent the text functions also as a laboratory manual. Strictly human embryology is treated separately, although correlated with the foregoing descriptions of chick and pig embryos; there are chapters on the youngest known embryos, fetal membranes, the uterus in menstruation and pregnancy, and orderly accounts of individual systems, organs and tissues. Developmental anomalies are considered, briefly, in their relation to normal genesis of the structures affected. The book is characterized by clearness and conciseness of descrpition and by the excellence of its illustrations.

HAROLD CUMMINS.

Manual of Practical Anatomy, by Cunningham; revised and edited by Arthur Robinson. William Wood & Co., New York, 1920.

Cunningham's manual has become so well known through its use since 1896 as a "dissector", that mention of the plan and distinctive features of the book seems almost unnecessary. As the name implies, it is a manual, a condensed treatise of anatomy adapted to use in the laboratory. The order of descripton is regional rather than by systems and structures within a given region are described in sequence as they are exposed in dissection. Full directions for dissection are incorporated. In the later editions B. N. A. terminology is given precedence, although old terms are inserted in parentheses after the new. A useful comparative table of the two terminologies is placed in the front of each volume; at a glance it is possible to determine the B. N. A. equivalent of an old term, or vice versa. The seventh edition is published in three volumes, instead of two as formerly. Volume one covers the arm and leg, volume two, the thorax and abdomen, and volume three, the head and neck. The increase in size, which necessitated publication in three volumes, apparently is largely due to the addition of new figures and revision of the directions for dissection. A number of radiographs form a noteworthy addition to the illustrations. The dissecting directions are printed in a type much more easily read than in former editions.

HAROLD CUMMINS.

Fundamentals of Human Anatomy, by Marsh Pitzman, first edition. C. V. Mosby Company, St. Louis, 1920.

Of the total text pages there are 38 on "systemic anatomy" (skin, general structure of muscles, bones, and joints, vessels, etc.), the remainder covering descriptive regional anatomy of the entire body. "Borderland districts" are accorded especial emphasis; however, it is in a brief and elementary manner that the writer points out the correlation between structure and normal function, the relation of disturbed function to structure, the application of anatomical facts to an understanding of physical lesions, etc. In the words of the author, "this book makes no pretense except as an auxiliary to the more complete works"; consequently the anatomical descriptions are not detailed. HAROLD CUMMINS.

The Medical Record Visiting List. Wm. Wood & Co., New York.

This physicians' visiting list or diary for 1922 has been issued in handsome style and in its usual forms. The printed pages, containing tables of dosage, of weights and measures, of differential diagnosis of contagious diseases, of duration of pregnancy, etc., have been revised and brought up to date.

PUBLICATIONS RECEIVED.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Essays on Surgical Subjects, by Sir Berkeley Moynihan, K. C., M. G., C. B.

The Medical Clinics of North America, Vol. 4, No. 6, May, 1921, Vol. 5, No. 1, July, 1921.

The Surgical Clinics of North America, Vol. 1, No. 3, June, 1921; Vol. 1, No. 4, August, 1921.

THE MACMILLAN COMPANY, New York.

Greek Medicine in Rome, by Sir Clifford Allbutt, K. C. B.
Benign Stupors, by August Hoch, M. D.

WILLIAM WOOD & COMPANY, New York.

The International Medical Annual, 1921.

The Practice of Urology, by Charles H. Chetwood, M. D., LL. D. F. A. C. S., Third Edition.

Physicians' Visiting List, 1921.

P. BLAKISTONS SON & CO., Philadelphia.

Morris's Human Anatomy, edited by C. M. Jackson, M. S., M. D., sixth edition.

C. V. MOSBY COMPANY, St. Louis.

Diseases of the Skin, by Richland L. Sutton, M. D., fourth edition.

YEAR BOOK PUBLISHERS, Chicago.

The Practical Medicine Series; Vol. 2, General Surgery, by Albert J. Ochsner, M. D., F. R. M. S., LL. D., F. A. C. S.

The Practical Medicine Series; Eye, Ear, Nose & Throat, by Casey A. Wood, M. D., C. M., D. C. L., Albert H. Andrews, M. D., and George E. Schambaugh, M. D.

PAUL B. HOEBER, New York.

What to do in Cases of Poisoning, by William Murrell, M. D., F. R. C. P. twelfth edition.

The Blood Supply to the Heart, by Louis Gross, M. D., C. M.

WASHINGTON GOV'T. PRINTING OFFICE, Washington, D. C.

Public Health Reports, Volume 36, Nos. 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43; Volume 36—Part 1, Numbers 1-25, January-June, 1921.

United States Naval Medical Bulletin, Vol. 15, No. 4, October 1921.

MISCELLANEOUS:

The Rockefeller Foundation, A Review for 1920, The Program for 1921, by George E. Vincent, Pres.

Infant Mortality in New York City, by Ernst C. Meyer, Ph. D , International Health Board.

The Rockefeller Foundation, International Health Board, Seventh Annual Report, January 1, 1920, December 31, 1920.

A Treatise on Cataract, by Donald T. Atkinson, M. D., The Vail-Ballou Company, New York.

Diagnosis of Protozoa and Worms Parasitic in Man, by Robert W. Hegener, and William W. Cort, Williams & Wilkins Co., Baltimore.

Report of the Connecticut State Tuberculosis Commission, October 1, 1918, to June 30, 1920.

REPRINTS.

The Semi-Centennial of the Introduction of Antiseptic-Surgery in America, by Henry O. Marcy, A. M., M. D., LL. D.

Measurements of Trypanosoma Diemyctyli from Different Hosts and Their Relation to Specific Identification, Heredity and Environment; The Relation of Medical Zoology to Public Health Problems; Medical Zoology in Europe, by R. W. Hegener, Ph. D.; **Surveys of the Intestinal Protozoa of Man, in Health and Disease,** by R. W. Hegener, Ph. D., and George C. Payne, M. D.; **An Analysis of the Relation Between Growth and Nuclear Division in a Parasitic Infusorion, Opalina SP.,** by R. W. Hegener, Ph. D., and Hsiang-Fong Wu., M. D.; **Giardia (Lamblia) Intestinalis,** by Kenneth F. Maxcy; **Benign Mammary Tumors and Intestinal Toxemia; Some Lessons of the World War in Medicine and Surgery from the German Viewpoint,** by William Seaman Bainbridge, M. D.; **One of the Pioneer Women of Tuberculosis; A Tuberculosis Ramble,** by Stephen J. Maher, M. D.; **Cytomoeba Bacterifera in the Red Blood Cells of the Frog,** by R. W. Hegener, Ph. D.; **The Myocardium and Heart Murmurs with Illustrative Case Reports,** by Samuel E. Earp, M. S. M. D.; **Traitement des Suppurrations ethmoidales par voie nasale,** by Georges Portmann, M. D.; **Lymphangio-sarcome du nasopharynx; L'Adénite Amygdalienne,** by Georges Portmann, M. D.; **L'Appareillage des Amputés, Comment on peut le perfectionner,** by Docteur G. Bidou.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans. for October, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	5	1	6
Intermittent Fever (Malarial Cachexia)			
Smallpox			
Measles			
Scarlet Fever	1		1
Whooping Cough		1	1
Diphtheria and Croup	3	1	4
Influenza	4	4	8
Cholera Nostras			
Pyemia and Septicemia	2		2
Tuberculosis	37	32	69
Cancer	27	7	34
Rheumatism and Gout	1		1
Diabetes	6	1	7
Alcoholism			
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia	2		2
Congestion, Hemorrhage, Softening of Brain	20	12	32
Paralysis	4	3	7
Convulsions of Infancy	1		1
Other Diseases of Infancy	11	9	20
Tetanus		1	1
Other Nervous Diseases	5	1	6
Heart Diseases	69	30	99
Bronchitis	1	1	2
Pneumonia and Broncho-Pneumonia	18	14	32
Other Respiratory Diseases	1	2	3
Ulcer of Stomach			
Other Diseases of Stomach			
Diarrhea, Dysentery and Enteritis	12	8	20
Hernia, Intestinal Obstruction	7	1	8
Cirrhosis of Liver	7	2	9
Other Diseases of the Liver		2	2
Simple Peritonitis		1	1
Appendicitis	11	5	16
Bright's Disease	17	8	25
Other Genito-Urinary Diseases	12	14	26
Puerperal Diseases	5	4	9
Senile Debility			
Suicide	1		1
Injuries	24	13	37
All Other Causes	35	20	55
Total	351	199	550

Still-born Children—White, 25; colored, 26; total, 51.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death Rate per 1000 per annum for Month—White, 14.52; colored 20.71; total 16.50. Non-residents excluded, 13.86.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30
Mean temperature	72
Total precipitation	1.85 inches

Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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Vol. 74. JANUARY, 1922. No. 7.

EDITORIAL.

THE GORGAS MEMORIAL.

All members of the medical profession will be interested in the announcement of the plans of the Board of Directors of the Gorgas Memorial for the establishment of an institute in the City of Panama for research in the means of prevention of tropical diseases.

Anyone who has seen the old Panama could not but be struck today with its splendid sanitation, its beautiful cities, its five hospitals, and above all, by the completion of the Canal itself, making the present Panama one of the most beautiful and salubrious spots in the world.

It is well known that the accomplishment of this sanitary regeneration of Panama is due to the efforts of the late William C. Gorgas, Surgeon General of the United States Army.

Coupled with his earlier work in Cuba, the accomplishment of General Gorgas in conquering Yellow Fever and Malaria and conclusively demonstrating the fact that health, even in the tropics, is a purchasable commodity has sent forth his fame throughout the world. His great attachment for Panama has made the proposed Memorial to carry on the work he so ably started, the most practical tribute which could be conceived to his memory.

The conception of this idea is that of Dr. Belisario Porras, the President of the Republic of Panama, who in the name of his government has tendered the site, a building, and all required equipment, valued in all at approximately $500,000. At the request of Dr. Porras, Admiral Braisted, former Surgeon General of the United States Navy, with the co-operation of others equally interested, incorporated the Gorgas Memorial Institute for the purpose, in addition to directing the scientific work, of raising an endowment fund of five million dollars for maintenance.

Dr. Richard P. Strong of Harvard University, was chosen to head the Scientific Board. The Advisory Board, of which Secretary of State Hughes is Honorary Chairman, consists of the diplomatic representatives of all the Central and South American countries and representative committees of national medical and surgical associations, public health groups, and many Southern Societies by which Gorgas was beloved.

The Memorial will be built adjacent to the new Santo Tomas Hospital and the use of its complete facilities has been tendered to aid in the launching of the work. The building will consist of a classic structure patterned after the lines of the Pan American Union in Washington, D. C. It will house the laboratories and provide facilities for the teaching of students from the various tropical countries and from our own leading schools of tropical medicine.

The Tropics, so prolific in vegetation of every kind, have been fertile in the development of all types and kinds of dread diseases, which tended to make them unsuited for habitation before sanitation made them safe. They can become desirable and attractive, as well as prosperous abiding places, a fact which makes Panama most desirable as a home for the Memorial. Its success means the fulfillment of General Gorgas' great desire, to eliminate the devastating tropical diseases, and a fitting recognition of the role of world-wide importance that the medical profession played in the construction of the big canal.

ANTITOXIN BY MOUTH.

It will be remembered that we published, in our November number, an account of the alleged successful administration of diphtheria antitoxin by the buccal route. We expressed the opinion that this was important if true and should be thoroughly investigated as the advantages were obvious if the method proved reliable.

At a recent meeting of the *Société Médicale des Hopitaux de Paris* a report was made by three members who had studied the question and whose conclusions were quite different from the ones previously quoted. They claimed that it could be demonstrated that the antitoxin, when swallowed, did not penetrate the gastro-intestinal mucous membrane, but their chief reliance in their opposition to the newly vaunted method of administration was placed upon the effects of the Schick reaction. It was found that while, in subjects determined to be susceptible to the disease by means of the Schick test, the subcutaneous exhibition of a small quantity of antidiphtheritic serum prevented the positive reaction upon a repetition of the test, the internal administration of the antitoxin had no effect on the Schick reaction.

The above is advanced as proof that the administration of diphtheria antitoxin by the digestive route is without therapeutic effect, hence that the adoption of this method might have the gravest consequences.

We feel it is highly important that we should present this side of the question promptly and with as much prominence as we had previously given to the other view.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

FACTORS INFLUENCING THE RATE OF MORTALITY IN SURGERY OF THE THYROID GLAND*

By J. M. BATCHELOR, M. D., New Orleans.

In order to discuss those factors that influence and determine the rate of mortality in thyroid surgery, it is first necessary to understand the functions of the thyroid gland, secondly to possess a clear knowledge of tissue changes brought about by thyroid pathology. The function of this gland is well known. It depends upon an internal secretion elaborated within itself. In 1914 Kendall isolated and identified a definite chemical compound to which he gave the name thyroxin, and it is upon this chemical substance that the gland depends for its functional activity. The thyroid gland is the great regulator of cell metabolism. It is true that in the absence of the thyroid gland the ordinary internal cell inspiration is carried on, but this is done in an imperfect way and without the regulation of the specific thyroid secretion, the cellular activity deviates from the normal and there is an arrest, short of complete, cell functioning. It is therefore safe to say that the thyroid gland is the regulator of the internal cell inspiration, and that hyperactivity of this gland produces an intense cellular activity, resulting in a general internal conflagration, with an excessive liberation of energy and a rapid breaking down of tissues. Conversely, deficient thyroid secretion results in subnormal cellular activity.

For the purpose of this paper, only those diseases of the thyroid resulting in hypersecretion will be considered. Reference to simple goitre will be made only to say that surgery in this connection is not attended with more than usual risks incident to major surgical operations.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

Adeno-thyroid, with hyperthyroidism and exophthalmic goitre, represent the two types of thyroid disease which produce organic changes, which if prolonged threaten the life of the patient. The cells of the brain, the liver and the myocardium are exquisitely sensitized, and are abnormally susceptible to stimuli, that is to say to physic influences, traumatic, anesthetic and biochemical. Briefly the three dominating factors influencing the mortality rate in thyroid surgery are 1st, the physical condition of the patient when brought to operation, 2nd. the anesthetic adapted to the individual subject, 3rd. the technical skill, experience and judgment of the operator.

The condition of the patient at the time of operation is determined by the measures employed during the preparatory stage of treatment. At this time the mortality rate may be said to be fixed, for the outcome of the case must depend upon the wisdom and care displayed by the surgeon in the adoption of methods for rebuilding the exhausted organism, and erecting barriers against the stress of a serious surgical operation. Thyroid cases that come to the surgeon for operation are no longer merely cases of thyroid gland disease. There is a general cell sickness, and it is during this preparatory stage that all measures should be instituted to restore the patient to as near a physiological equilibrium as possible.

In exophthalmic groitre there are periods of exacerbation and of remission; vomiting, and rejection of fluids is characteristic, so that the tissues become in a measure dehydrated, and alkalinity of the blood is often lessened to a point of acidosis. The metabolic rate is high. Often acetone and diacetic acid are present in the urine. These facts emphasize the necessity for a careful study of each individual case, and point out the importance of treatment to counteract the conditions here outlined. The basal metabolic rate determines the gravity of the disease. Plummer has shown in a large series of cases studied in the Mayo clinic, the invariable correspondence between the clinical symptoms and the basal metabolic rate. If repeatedly determined during this stage of preparation, the rise or fall of the rate will indicate the particular cycle of the disease of the patient under treatment. The patient approaching the crisis of a period of exacerbation is not as good a risk as one with a higher metabolic rate, but who has been shown by repeated metabolic tests to be on the ebbing wave and not in the ascending scale of a period of exacerbation.

Presence of acetone and diacetic acid in the urine calls for special consideration, and suggests the possibility of an impending acidosis. There can be no doubt that deaths following operation, credited to shock, are due frequently to an acute acidosis precipitated by the anesthetic, and the trauma of the operation Quillian affirms "that acidosis has a dominating influence in surgery; 2nd, by preliminary and post-operative treatment acidosis may be eliminated; 3rd, post-operative discomfort and nausea are greatly diminished by liberal preliminary use of sodium bicarbonate; 4th, surgical shock may be avoided by preventing acidosis, and by rapid, careful technique in operative procedures. Levison states, "when acetone is present before operation, the organism may be able to take care of the anesthesia without disastrous results, but when diacetic acid is present before operation the condition is aggravated and frequently results in an acid intoxication." These statements emphasize the far-reaching influence of the preparatory stage of treatment. No regimem can be too elaborate. and the surgeon who neglects the most trivial detail in the survey and treatment of the patient prior to operation does not appreciate the responsibility resting upon him, and is building up for himself an unenviable operative mortality.

The question of anesthesia has come to assume a prominent place in operations on the thyroid gland. In the early stages of hyperthyroidism, where degenerations have not progressed to a marked degree, where the myocardium does not show evidence of degeneration, and where the circulation is adequate, the question of the anesthetic is not of extreme importance, but in those cases that are approaching the terminal stage with evidence of decompensated heart, extreme brain sensitization, and all the other symptomatic evidences of the ravages of super thyroidism, the question of type of anesthetic to be employed becomes a matter of foremost importance. All inhalation anesthetics cause suboxidation, with lessened blood alkalinity, and the life of the cell—therefore of the patient—may be jeopardized by the selection of an improper anesthetic. Crile has definitely ruled out ether, and has adopted the combined nitrous-oxide analgesia with local anesthesia. Gas and oxygen in common with ether does lessen the alkaline reserve of the blood, but it has the advantage of producing no cellular changes in the brain cortex, and therefore does not further lessen or lower the threshhold of brain resistance to afferent stimuli from wound traumatism. The employment of local anesthesia further blocks the afferent impulses originating in the wound, and thus protects the patient from surgical shock. The individual experience and technical skill of the operator are the final factor in determining the mortality of operation. It is often unwise to carry an operation to conclusion, and surgical experience will often dictate the necessity for ending an operation, to be completed at a subsequent time, either the same or the following day, often the few minutes required to complete an operation are decisive in determining the fate of the patient.

DISCUSSION.

Dr. H. P. Jones, New Orleans: It is believed that one of the most important preparations for thyroidectomy is radiation with the x-ray or radium. The effect of one properly applied treatment of the x-ray of the required strength is practically equal to that of ligation, and if you continue to radiate your cases sufficiently, short of destroying tissue, you can in the course of time bring about a condition of hypothyroidism, so that the whole thing is opened up as to whether the treatment of many cases of goiter by the use of the x-ray is not a method of choice as against a surgical procedure. Statistics seem to show from properly selected cases the terminal results at the end of three years from the use of the x-ray are as favorable, if not more so, than those secured from surgical interference. Of course, I know as well as you do that there are lots of cases that we must operate on and as quickly as possible, but it is believed that all cases are benefitted by the use of the x-ray prior to operation. Dr. Cohn and I saw together a case that was disastrously affected by the x-ray, in that perhaps the x-ray was used too much and there was a secondary sloughing of the esophagus, a very serious complication. The patient nearly lost her life, but ultimately made a perfect recovery. The radiation was used first without apparent effect and subsequent operation was undertaken.

There are cases of hypothyroidism produced by the x-ray. It is a matter of interest to me to know that there are reported no cases of tetany following the use of the x-ray, and we ought to be fearful of destroying the thyroid gland to the point of hypothyroidism where we know it may produce tetany.

Dr. F. W. Parham, New Orleans: Dr. Batchelor has mentioned the factors of safety in an adequate manner, and I agree with him.

I want to discuss the particular point Dr. Jones has referred to as I have seen a case with him. It was a remarkable case. There were 9 x-ray treatments given to that young lady. She was in an extreme condition of hyperthyroidism, and where we thought we would give her the benefit of the x-ray treatment. The nine treatments were carried out thoroughly, but there was very little benefit and she came to operation. The operation was not particularly difficult. I would call attention to too much X-ray radiation before operation which makes the dissection much more difficult. That must be regarded, in connection with later operation. There was leakage in the esophagus so that fluid taken by the mouth came out into the wound. The small muscles of the neck sloughed away. I did a gastrostomy under local anesthesia in order for her to get proper nutrition. The wound finally closed up, and she has today a perfect result from treatment as I look at it. Her basal metabolism is normal. She has made a complete recovery as Dr. Jones has stated.

Dr. J. A. Danna, New Orleans: I rise to express a little skepticism as to the value of the x-ray in the preoperative treatment of goiter. While we do get occasionally a series of reports of very good results, such reports are followed by reports of other men, just as after telling how good the x-ray was for goiter, Dr. Jones said that in one case 9 treatments were given without any appreciable benefit. The men who are doing the largest amount of goiter work, I believe, look upon the x-ray and radium as adjuncts which help in some cases, but which in others do absolutely no good.

It is a question of judgment what to do for a goiter case, when to operate, how far to go, what operative procedure to do. These are points involving as much serious thought and judgment as anything that the surgeon has to decide. A general rule that is followed in handling very sick goiter cases is to get the patient as well as you possibly can with rest and other means. When you get the patient down to the minimum of basal metabolism, as made out by your metabolic tests, or if you have no basal metabolic machine and the means of making these examinations, judgment of the patient's condition is evidenced by the pulse and improvement in the general symptons, then you can do the slightest surgical procedure you can think of, either hot water injections or ligation of one of the poles. If the patient stands hot water injection well, or if the patient stands pole ligation well, you are in a position to know whether to go ahead in a few days or a few weeks and do a thorough and complete thyroidectomy or not. There is nothing a surgeon has to handle which requires more sober judgment than the handling of sick thyroid cases.

Dr. A. C. King, New Orleans: There is just one point in regard to Dr. Batchelor's paper to which I wish to refer in connection with the factors influencing the mortality, and that is the mechanical handling of thyroid cases. The older operators know all about this. This warning I throw out to the young men who are beginning thyroid surgery. One of the greatest factors in influencing results is hemorrhage, and in large thyroids with dilated veins, hemorrhage is simply terrific. I recall a case I had at the Charity Hospital. It was my first case, and Dr. Danna will recall it. The patient survived, but only after an infusion of saline. In these large goiter cases the veins running across are extremely large and in cutting these vessels it is best always to catch them above and below and cut between the forceps.

It is not easy to catch a vein that is bleeding profusely. The field becomes flooded with blood and the vessel retracts, and you have all sorts of trouble, and hemorrhage is a serious handicap in operating on large thyroids. Dr. Miles, one of the former house surgeons of the Charity Hospital, threw out a valuable hint in regard to catching vessels; namely, always see the vessel before you catch it. This holds good particularly in neck work, where the vessels are so large and so liable to fill the field with blood. That is one of the little things for the young men to keep in mind. The operator must know what he is going to do, and the next thing is to have a capable assistant. When the work is to be done rapidly, the assistant should be as capable as the man who is handling the knife.

Dr. E. Denegre Martin, New Orleans: Not until we begin to use common sense and thresh this matter out well and prepare our cases carefully before operation, will we cease to have this trouble.

The only question is to determine what cases will have to come to operation and what not, and when we have determined this we have overthrown the real difficulty. If a case is treated with x-ray which will eventually have to come to operation, you are complicating the case beyond all expectations. I am afraid to operate on such cases.

Dr. J. M. Batchelor, New Orleans, (Closing): I am very much pleased with the amount of discussion the paper brought out. It was written for the purpose of insisting upon a careful study of each individual patient during the preparatory stage. We must recognize that it is a disease of such variation that the same procedures are not applicable to every case; that we must know the stage of the disease in the individual patient, and take every means of combatting the gravest factor present.

A study of the metabolic rate has done a great deal toward informing us as to the gravity of the disease in each individual case. By repeated estimations of the metabolic rate we are enabled to follow the progress and trace it down, during our period of treatment and medication to a higher state of activity to one approaching normal, if not within a safe limit.

The question of the x-ray versus surgery is one that we could discuss for some minutes. The chief objection to radiation is that we are unable at this time to properly measure the dosage; that we overradiate and destroy the gland, producing hypothyroidism, or we may even, if not producing such extreme changes, cause adhesions which will greatly complicate the operation, producing surgical shock that could have been obviated if the gland was in its normal pathological condition.

Referring to Dr. Jones' question as to why the ray does not destroy the parathyroid, I would suggest that one reason is there are frequently accessory thyroids placed up and beyond the gland and outside of the field of radiation. A second reason would be inasmuch as these glands lie on the posterior surface of the thyroid, which in diseased conditions is very much thickened, the ray does not penetrate with sufficient intensity to destroy the parathyroids.

THE DIAGNOSIS AND TREATMENT OF PERFORATING GASTRIC ULCER, WITH REPORT OF TWO CASES*

By JOHN L. WILSON, M. D., F. A. C. S., Alexandria.

My object in presenting this subject is to call the attention of the general practitioner to the symptoms and early diagnosis of the condition and to emphasize the importance of an early operation.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

''The perforation of a gastric or duodenal ulcer is one of the most serious and overwhelming catastrophes that can befall a human being. The onset of the symptoms is sudden, the course rapid, and unless surgical measures are adopted early, the disease hastens to a fatal ending in almost every instance.''—Moynihan.

In making a diagnosis of an acute perforating gastric ulcer it is important that we have a good history of the patient. The patient is usually one who has suffered for a number of years, fifteen or twenty, with gastric disturbance, as a result of chronic gastric ulcer.

These ulcers occur in patients of from thirty to sixty years of age, and are more frequent in males than in females, in the proportion of three to one. Pain or gastric discomfort is one of the most prominent of the symptoms complex. The pain is described as boring, burning, gnawing, cutting, more rarely lancinating, or cramplike, sometimes a dull ache, paroxysmal in character, and at times excruciating, radiating to the back.

The taking of food into the stomach gives relief for a greater or less time, depending upon the kind of food taken. Liquids give relief for a shorter time than a more bulky meal. This is due to the fact that liquids empty from the stomach more quickly than a bulky meal.

The work of Carlson and Cannon tends to show that the cause of pain in gastric ulcer is due to intra-gastric tension and gastric contraction, hunger pain, rather than to the corrosive action of the gastric juices. Tenderness usually exists in the epigastrium or dorsal region, just below the xiphoid cartilage or perhaps a little to the left of the midline. Point tenderness may be found in the back between the tenth and twelfth dorsal vertebræ. It is of diagnostic value, especially when it corresponds to the seat of pain after eating.

We must bring to our aid in diagnosis the roentgen ray. The radiogram properly made and interpreted is of great value in making the diagnosis of gastric ulcer. Stomach analyses are also of value. We should bring to our aid all laboratory methods in the diagnosis of gastric ulcer. With the proper study of chronic ulcers and diagnosis of them we could in many cases recognize the preperforative symptoms and by a timely operation save the lives of many of these sufferers.

Acute perforation occurs in three percent. of chronic gastric ulcers located on the anterior stomach wall and in nine percent. of ulcers located on the posterior wall.

Perforation of gastric ulcer is divided into acute, sub acute and chronic. The acute perforation occurs suddenly and completely without any protection to the peritoneal cavity, allowing the stomach contents to pour into the peritoneal cavity. In the sub-acute type the opening is smaller, the stomach usually contains less food, the opening usually plugged with omental flap or lymph formation has taken place, thus protecting the peritoneum from contamination with stomach contents, therefore the danger is less to the patient.

In the chronic type the ulcer has eaten its way through the stomach coats, protective peritonitis having taken place, protecting the peritoneal cavity somewhat. This type usually occurs on the posterior wall of the stomach and results in perigastric abscess or sub-diaphragmatic abscess.

Acute perforation is manifested by sudden severe pain in the epigastrium, extreme rigidity of the abdominal muscles especially in the epigastric region. In fact the entire muscular system is rigid. Shock, pallor, subnormal temperature, with pulse practically normal in the first few hours. The practically normal pulse is frequently misleading when thinking of such catastrophe. The gravity of the condition has been overlooked by the best surgeons on account of practically normal pulse.

Leucocytosis is present, vomiting may or may not be present. and may be exhausting; the vomiting will depend upon the amount of food present in the stomach. We cannot appreciate the symptoms in such patients until we have once seen one suffering with symptoms of acute perforation.

When we consider the patient with history of chronic gastric ulcer of long standing, with the development of the above symptoms we may be practically certain of the diagnosis of perforating gastric ulcer.

Treatment. Operation in acute perforating gastric ulcer should be as speedily performed as possible. The mortality in such cases when operated within four or six hours is very low, after six to twelve hours the mortality will run 50 to 60 per cent and after twenty-four hours practically all die. It is therefore very important that an early diagnosis be made in order that we may give the patient a greater chance for his life.

The incision should be made above the umbilicus, to the right or the left as the surgeon may decide and immediate search made for the perforation, which is usually not difficult to find. We usually see gas or stomach contents escaping from the perforation. That portion of the stomach is pulled up and the rest surrounded by lap sponges rung out of normal saline solution. The ulcer is then closed. Several methods may be used. In the two cases which I give histories of, I closed the perforation with a purse-string suture reinforced with Lembert sutures. We should then search for other perforations, close them if present, cleanse the peritoneum and close the abdomen without drainage in the acute perforations. The matter of drainage will depend, however, upon the conditions found, the time which has elapsed since perforation took place, the amount of soiling of the peritoneum which has taken place, etc. The subdiaphragmatic region, kidney pouches and other regions soiled should be carefully cleansed in all cases.

In some cases where closure of the perforation properly will constrict the pylorus it would probably be well to perform posterior gastric-enterostomy. The excision of the ulcer must be left to the judgment of the individual surgeon.

These patients after recovery from the anesthetic should be propped up on bedrest or pillows. In case the stomach contains food the tube should be used and the stomach emptied. Nothing should be allowed by mouth for twenty-four hours, after twenty-four hours small amount of water, tea, and later small amount of milk allowed. Normal saline glucose should be given by rectum.

Case No. 1. John B. R., Age, 38, American. Father and Mother both living and in good health. Had typhoid fever at age 23, severe. Has had measles, mumphs and usual diseases of childhood. He had an acute attack of appendicitis in 1917, and was operated by Dr. E. D. Martin at Hotel Dieu, this city. This patient had suffered with dyspepsia for fifteen years. He describes the gastric discomfort which he had as a fullness of the stomach, with a dull ache. The discomfort was always relieved for two hours after taking food, after which the discomfort would be as great or greater than before. Finally he got to where he could only take milk. He informs me that Sodium Bicarb would relieve him temporarily and that nothing else would give relief.

On March 10, 1918 while at work, his occupation being locomotive engineer, he was seized with excruciating, burning pain in the epigastrium. In his words "there is no pain so severe."

I reached him a short while afterwards, found him suffering excruciating pain with extreme rigidity of the abdominal muscles, shock, with practically normal pulse rate. I at once moved him to the hospital and operated within two hours. When the abdomen was opened I at once found a perforated ulcer on the anterior wall of the stomach about 3 inches from the pylorus. The perforation was closed with a purse-string suture, re-inforced with Lembert sutures, the peritoneum cleansed and closed without drainage. He made an uninterrupted recovery, leaving the hospital in about two weeks. He was well or without symptoms for one month after which he began to have gastric disturbance. I then sent him to the Mo. P. Ry. hospital at St. Louis, where they opened the abdomen and found some constriction of the pylorus, with induration and they performed a posterior gastroenterostomy. He has been symptomatically well since that time, able to eat most any food, has gained weight, etc.

Case No. 2. C. R. Age 32, American, Family history same as case number one as they were brothers. He had typhoid fever in 1906. Had measles and the usual diseases of childhood and pneumonia. He had suffered with dyspepsia for fifteen years or more with symptoms about the same as case number one.

On March 12, 1916, just after he had quit work for noon, one of his friends who was working with him, punched at him with his fist and when he suddenly jumped out of the way the perforation took place. I arrived within a short time and found him suffering with excruciating pain in the epigastrium, rigidity of the abdominal muscles as well as the general muscular system, shock, with pulse rate practically normal. I had him moved at once to the hospital, opened the abdomen within two hours, found a perforated ulcer on the anterior wall of the stomach. The ulcer was closed with purse-string suture, re-inforced with Lembert, peritoneum cleansed, abdomen closed without drainage. He made a good recovery and has had no further symptoms. I was assisted in the treatment of this patient by the late Dr. Warren F. Scott.

DISCUSSION.

Dr. E. Denegre Martin, New Orleans: This is a most interesting subject. One of the strongest points Dr. Wilson brought out was with reference to the diagnosis of perforating gastric ulcer. If you have ever seen such a case you cannot very well forget it. There is no rigidity so severe and board-like as in a perforating ulcer of the stomach. Unfortunately these cases get to us usually after perforation has occurred, without any previous history, except as given by Dr. Wilson.

I recall the case of a carpenter, who went to work early in the morning and perforation occurred two hourse later. He stated that he had a little indigestion, but never knew he had any stomach trouble.

I have had four other cases in the last year, and in two of these perforation occurred near the pylorus, so that I was able to resect the ulcer entirely and to do a Heinecke-Mikulicz pyloroplasty. In the first case in which I did this the patient was not in good condition, and nothing more was done at the time than was really necessary as I thought he would die if the operation were prolonged. It was done as a life-saving measure; a second operation was necessary in about two months ago. Contraction had taken place, and I had an x-ray picture taken showing the constriction. I did a posterior gastroenterostomy, and recently the patient told me that he was well.

In the second case I was able to resect and do a Heinecke-Milkulicz operation. This resulted in recovery and cure.

In the third the perforation was near the pylorus, and I resected without any trouble. In the fourth case the perforation occurred near the cardiac end and I thought that was a cancer. I was unable to tell at the time because the condition of the man did not warrant prolonged operation. I did not try to resect a portion of the tissue. He died on the eighth day after operation from pneumonia. I was able to confirm the diagnosis.

Dr. Rudolph Matas, New Orleans: There is no better proof of the progress of surgery in Louisiana than the paper presented by Dr. Wilson. Twenty-five years ago, in 1895, when I had the honor to preside over the deliberations of this Society, such a paper would have created a sensation even though it had emanated from the most experienced surgeon in the best equipped hospital of the metropolis. Up to 1895 the literature of perforating duodenal ulcer consisted chiefly of postmortem records. I reported my first experience with this lesion in 1897. I remember in 1900, Dr. Robert Weir, of New York, in his presidential address at the meeting of the American Surgical Association, reported one personal observation and tabulated the first 51 operated cases in the literature, and in only 13 of these, was the diagnosis right and the ulcer found and properly treated. Then, an operation for a perforating ulcer of the duodenum was an extraordinary event, more so if it was followed by a successful issue. Such cases were almost the exclusive monopoly of the largest and best equipped metropolitan clinics. Today, operations for duodenal ulcers have become so common that it would be idle and practically impossible to tabulate them. With improved methods of diagnosis and the increasing safety of surgical explorations the operative treatment of duodenal ulcer has long passed the mark of the extraordinary in surgery. This does not minimize the merit of the performance which demands judgment and skill of high order to be successful, nor does it diminish the splendor of this achievement which is one of the most legitimate triumphs of contemporary abdominal surgery.

The experiences reported by Dr. Wilson demonstrate conclusively that the opportunities for the display of the best surgery are no longer confined, as they were largely,—less than two decades ago,—to the great metropolitan centers, but that the right men equipped in the most modern surroundings, are now available in the smaller cities and country districts. The distinction between the country and the city surgeons has lost its individious significance. The surgeons who reside in the parishes are now making an enviable record for the most skillful and efficient service to their communities.

I congratulate Dr. Wilson for the gratifying evidence of the progress of surgery in Louisiana, and of its diffusion throughout the state, which his contribution has so well exemplified.

Dr. J. L. Wilson, Alexandria (closing): I have nothing further to add except to emphasize the recognition of this condition by the doctors in the smaller towns, because as I have said in my paper early diagnosis and treatment means the patient's chance for recovery is much better. If you wait twelve or twenty-four hours, the patient is seriously ill, and then if you rush him to a hospital and operate you will have waited too late. The important thing is to carefully observe your cases of chronic dyspepsia which are most likely chronic gastric ulcers. Watch them and, when perforation occurs, do not wait, insist upon immediate operation. Let the patient have a chance to live.

SOME CAUSES AND SOME RESULTS OF CHRONIC INTESTINAL TOXEMIA*

By ALLAN EUSTIS, B. S., Ph. B., M. D., New Orleans.

Not many years ago it was with a certain amount of temerity that one discussed intestinal toxemia, which was earlier mentioned under the broad term, "auto-intoxication," but today, this condition is recognized as a definite clinical entity, notwithstanding the skepticism and cynicism of certain of our leading medical authorities.

Bouchard (1), Combe (2), Metchnikoff (3), Arbuthnot Lane (4), and some few other zealous workers were persistent in their early claims as to the toxic effect of the putrefactive substances, absorbed from the intestinal canal, but so little was then known as to the nature of these toxic substances; while evidences of absorption of putrefactive substances from the intestinal canal with no symptoms demonstrable were so numerous that it was but natural that men with scientific training should be slow to accept new theories and hypotheses.

Without quoting the multitudinous articles in the literature on the subject, which are available in any modern text-book on physiological chemistry, I believe I am justified in stating, First,. That the majority of these toxic substances are basic amins formed by the putrefaction of the several amino acids with loss of carbon dioxide. Second, That these putrefactive basic amins have definite physiological action. Third, That they are normally detoxicated by the liver. Fourth, That when they are not detoxicated, they exert their specific, physiological action on the individual.

However, a diagnosis of chronic intestinal toxemia, only, is rarely justifiable, any more than one of achylia gastrica, or tachycardia, unless the cause of same has been ascertained; but on the other hand, severe nephritis, a supposed diabetes, or a case of supposed hyperthyroidism, not to mention the large number of so-called neurasthenics, may have their causative factor in a chronic intestinal toxemia. With the hope of stimulating more exact diagnosis among those who accept chronic intestinal toxemia as a clinical entity, as well as to demonstrate by case reports, that it is capable of causing severe symptoms and producing pathological changes, this paper has been written.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

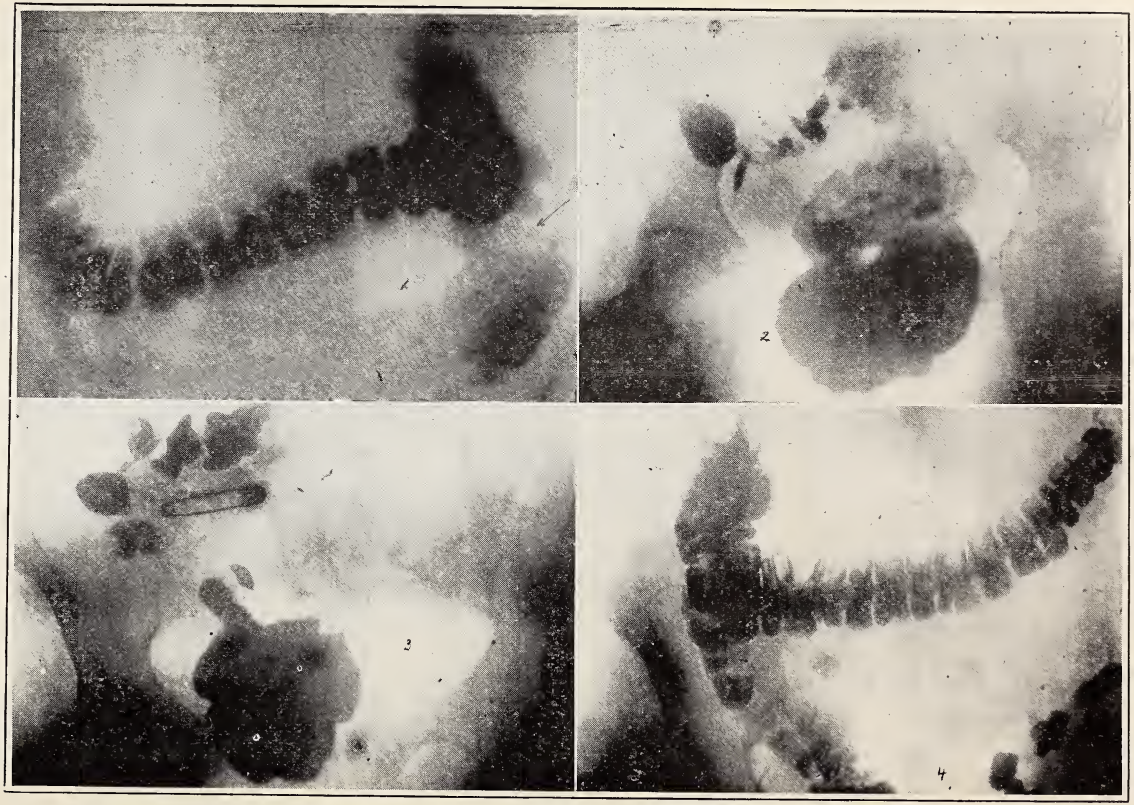
In previous articles, I have considered the relation of chronic intestinal toxemia to asthma, urticaria, nephritis, and certain cases of arterial hypertension, as well as the importance of a consideration of it in some cases of glycosuria, as well as in typhoid fever and malfunction of the liver. I believe the purpose of this paper can best be accomplished by simple case reports, with a discussion of each case.

Case 1. (Fig 1). Intractable intestinal toxemia with stasis in cecum, due to stenosis of ascending colon from cicatrical contraction after evacuation of rectro-cecal appendicular abscess.

J. M. G., 41 years old, applied to my clinic at the Charity hospital in 1916 for typical symptoms of intestinal toxemia, with a heavy indicanuria. Physical examination was negative. A supposed liver abscess had been drained four months previously and a three inch scar was visible in the tenth intercostal space. A persistent indicanuria in spite of active treatment led to a radiographic examination of the gastro-intestinal canal, by Dr. Granger.. A stenosis of the ascending colon was clearly visible in the twenty-four hour picture, but its cause was not determined until three weeks later, when he reported that there had been a recurrence of the abscess which had ruptured spontaneously, and evacuated a cup of pus. After injecting the sinus with collargol it was demonstrated by X-ray examination that the sinus led to the head of the cecum. The supposed liver abscess was a rectro-cecal appendicular abscess, which had pointed upward behind the liver. Subsequent laparotomy with eradication of the stenosis by a longitudinal incision through the colon with transverse suture, relieved the condition. The patient's symptoms promptly disappeared and he was able to partake of a fairly high protein diet without any of his former symptoms. The persistent intestinal toxemia led to a suspicion of stenosis somewhere in the bowel, and the x-ray made the diagnosis possible.

Case II. (Fig. II). Intractable intestinal toxemia. Stagnant appendix. Symptoms relieved by appendectomy.

Mrs. J. P. C., 38 years old, consulted me in September 1920, for severe headaches, occipital neuralgia, vertigo, nausea, belching and gastric distension. Physical examination and X-ray by Dr. Samuel revealed a stagnant and chronic appendix as the probable cause of her symptoms of intestinal toxemia and the persistent indicanuria. She was referred to Dr. C. Jeff Miller for laparotomy. At the operation the appendix was found clubbed at the end and contained fecal stones. A Jackson's membrane was also found. An appendectomy was performed with complete relief from all symptoms to date. Discussion. In a very interesting paper by Dr. Love, (6) recently read before the Orleans Parish Medical Society,



1. (Case I.) Shows stenosis of ascending colon from cicatricial contraction, result of retrocecal appendicular abscess.
2. (Case II.) Shows appendix visualized after 24 hours with cecal and terminal ileal stasis.
3. (Case IV.) Shows entire meal held in terminal ileum after 6 hours.
4. (Case IV.) Same as figure three, after 24 hours, showing marked colonic stasis.

ARTICLE OF DR. EUSTIS.

the patulous appendix was considered as a factor in many cases of persistent intestinal toxemia, and he suggested several ways in which this could take place. I prefer the term stagnant appendix, as an appendix may be patulous and still empty on time. The most rational one is that a stagnant appendix acts as a culture tube for putrefactive bacteria, constantly inoculating the cecum with this type of organism. This type of appendix is not to be confused with the chronic appendix with adhesions to the terminal ileum, which will be referred to in another case report. I have more than once been ridiculed by the operating surgeon for advocating removal of these stagnant appendices, for often at operation they appear normal; but invariably the symptoms referable to the associated intestinal toxemia are relieved after operation. That is, patients, who prior to operation could not eat any animal protein without presenting toxic symptoms, are able to indulge in animal protein once a day, without any ill effects after appendectomy, and are relieved of their previous symptoms of intestinal toxemia by removal of the appendix.

The next case also illustrates the importance of considering the appendix as a possible factor in the intestinal toxemia.

Case III. Bronchial asthma with intractable intestinal toxemia and stagnant appendix. Relieved by appendectomy.

Mr. P. O. LeB., 27 years old, was seen by me in April 1920, being a typical case of asthma from chronic intestinal toxemia, which resisted all my efforts to overcome same by dietetic and eliminative measures. He had been having three to four attacks a week. His nose, throat and sinuses were examined by Dr. Lynch and reported as being free from infection, and x-ray examination of the teeth was negative, while physical and laboratory examinations were also negative except for excessive indicanuria. Radiographic examinations of his gastrio intestinal canal by Dr. Samuel, was suggestive of a chronic appendix with cecal stasis. On repeated subsequent examinations an occasional tenderness and relative rigidity was elicited over McBurney's point, and I finally persuaded Dr. Lafferty of Bogalusa, with the consent of the patient, to perform an exploratory laparotomy on the tentative diagnosis of chronic appendicitis. He was operated upon the middle of June 1920, and the appendix which was bound down by adhesions and clubbed at the end, was removed.

He had asthma for two days following the operation, but no further attacks until August 21, 1920, while he had been on a moderately low protein diet, of chicken, milk and cream cheese once a day. On this date he ate fish and drank considerable liquor, with the result that he had asthma for two nights which was promptly relieved by a purgative and a low protein diet for a few days. The patient has since been indulging in a moderately low protein diet and has had no further attacks of asthma, according to a statement made to me at this meeting, by Dr. Lafferty.

Case IV. (Fig. III & IV.) Supposed Neurasthenia with Hyperchloridia; chronic cholecystitis with peri-cholecystic adhesions and terminal ileal stasis from band of adhesions partially occluding lumen of terminal ileum.

Mrs. T. J. F., Age 32, had been treated for neurasthenia, nervous indigestion, and hyperchloridia by various physicians. She was a very high strung, nervous individual when first seen March 11, 1921, but nothing was elicitied on physical examination except slight tenderness over the gall bladder. A severe, persistent indicanuria was present. Radiographic examination of the gastro-intestinal tract by Drs. Samuel & Bowie, suggested a chronic gall bladder and numerous adhesions binding down the terminal ileum in the pelvis and partially occluding the lumen, with marked ileal stasis. The patient was operated upon by Dr. Allen on March 24, 1921, and a chronic ulcerated cholecystitis was found, and a band of fascia pulling the terminal ileum down in the pelvis. The gall bladder was removed and the fascia delivered. She made an uneventful recovery, and while it is too soon to state the ultimate results, so far, there has been no return of her old symptoms. Certainly there would have been very little chance of accomplishing much unless the cause had been removed.

Case V. Severe Nephritis with uremia. Intractable intestinal toxemia. Patulous appendix and diverticulitis of sigmoid. Relieved by appendectomy and removal of diverticulum.

Mr. F. W. B. Age 58, was referred to me by Dr. Sabatier in Nov. 1917, for albuminuria, constipation, severe head-aches, which latter were so constant, that for the past year they had seriously handicapped him in his work as a notary public. The only points of interest in his family history were asthma in his mother, who had died at 56, and arterio-sclerosis in a sister, who is living at the age of 63. As to his previous history, he denied venereal infection, but had been a heavy drinker, averaging a quart of whiskey a day until 1898, since when he had been a teetotaler. Small-pox and measles during childhood, were his only acute diseases, but he stated that he had suffered from constipation since childhood, often as a youth, passing an entire week without a stool. Regarding his present illness, he began to have head-aches in 1880, usually associated with vomiting and relieved by a brisk purgative, but for the past fifteen years he had suffered almost constantly from head-ache, even after thorough purgation. In October, 1917, he had three convulsions, followed by coma, albuminuria and a systolic blood pressure of 210 m. m. He was treated by Dr. Sabatier by purgation, elimination and a gallon of milk a day, and in two weeks' time his blood pressure fell to 140 m.m., and he was able to resume work, but still troubled with a dull head-ache, which at times would incapacitate him. He stated that he had eaten no beef meat in twenty years as he found that the ingestion of even a small piece would be followed by a severe head-ache, but he had eaten chicken and eggs, and had drunk large quantities of milk.

Physical examination showed a small, poorly nourished man with sallow complexion. No palpable atheroma of peripheral arteries. Teeth in wretched condition from pyorrhea. His heart, lungs and nervous system were negative. His systolic blood pressure was 135 and the diastolic 85. The abdominal viscera was negative except a slightly enlarged liver, which was palpable below the costal arch and which was slightly sensitive on palpation. His weight was 113 lbs.

Urine, 1014, acid, negative except for a plus eight indican and hyaline casts. Phenolsulphonephthallein test showed 35 per cent. excreted in the first hour and 15 per cent. in the second hour.

Blood. White blood count, 8,437; red blood count, 4,660,000; Hemoglobin 80 per cent; Neutrophiles, 37 per cent, large mononuclears 3 per cent, small mononuclears 23 per cent, eosinophiles 18 per cent, basophiles 1 per cent, transitional 8 per cent. No plasmodia. Feces. Negative ova, parasites and occult blood.

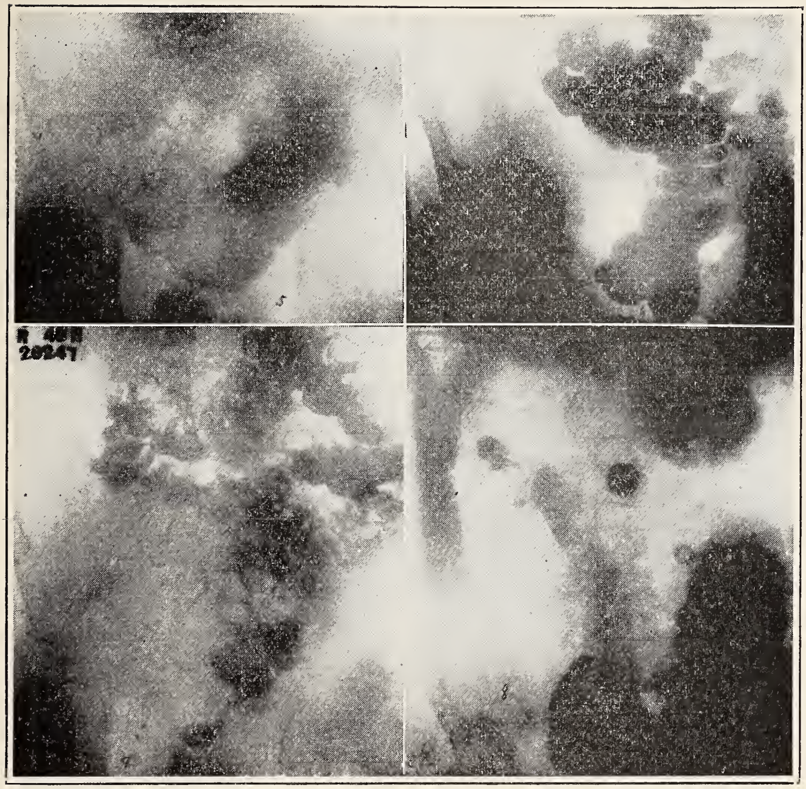
A diagnosis of toxic nephritis was made and an attempt made to overcome the intestinal toxemia, by a low protein diet, elimination and removal of diseased teeth.

The patient returned to me again after a year, with no improvement in his general condition, and even more intense indican reaction, large amounts of albumin and casts, and a systolic blood pressure of 200. X-ray examination at this time by Dr. Samuel, showed evidences of a stagnant appendix and a stenosis of the descending colon with enormous dilatation of the proximal portion of the colon. Operation was advised, and on April 17, 1919, Dr. Allen removed appendix about seven inches long containing three fecal concretions, and a small diverticulum of the sigmoid was found, containing impacted feces. This was invaginated into the bowel and a few Lembert sutures were taken over it. The colon which was very redundant and occupying the entire pelvis was anchored up by suture of the omentum to the anterior abdominal wall. He made an uneventful recovery and when he left the Touro Infirmary his urine was free from albumin and he resumed his work in about a ·month. He has been free from head-aches, his blood pressure has remained in normal limits and only an occasional trace of albumin is demonstrable.

This case exemplifies a type of nephritis of which I have records of about sixteen cases. There may be a primary cause for the nephritis, such as focal infections, lues, alcoholism, or infectious diseases, but if the kidneys are not too badly damaged, the nephritis can be relieved by treatment of the attendant intestinal toxemia. The importance of determining the cause of the intestinal toxemia in order to properly eradicate it, is well shown in the history of this case. In connection with this case, the recent work of Nellius Foster in New York, is of interest. He has found in the blood of uremic patients a basic substance which is toxic to guinea pigs, while he was unable to find it in the blood of normal patients. The putrefactive amins from the intestinal canal are basic and are obtainable by the method employed by Foster.

Case VI. (Figs. VI, VII & VIII.) Severe constipation and intestinal toxemia from transposition of the cecum, due to adhesions from traumatic peritonitis twenty-five years previous.

Mr. F. O. H., Age 37, consulted me March 28, 1921, for severe constipation since boyhood and symptoms of intestinal toxemia. All examinations were negative except the radiographic, made by Drs. Samuel & Bowie, which clearly explained the cause of his constipation. After six hours the barium meal was found jammed up in the terminal ileum and none had entered the cecum, while the terminal ileum was enormously dilated. The twenty-four hour pictures showed the cecum and ascending colon drawn far over to the left side, with a dilatation of the cecum, which was held in a fixed position by adhesions. After forty-eight hours and after the administration of a saline laxative and the passage of three stools, there was still considerable stasis in the distorted large bowel. Fluoroscopic and radiographic examination of the large bowel following injection of a barium enema showed marked pulling of the cecum to the left side, which was attached, apparently, to the sigmoid. The cecum was noted as being enormously dilated. In seeking for a cause for these numerous abdominal adhesions, it can be found in a history of general peritonitis at thirteen years of age, after having been run over by a wagon, the wheels crossing his abdomen. One hesitates to recommend any surgical interference in such a case, and yet Stockton (8) has recently reported such a case relieved by abdominal section and incision of the bands of adhesions binding the bowel. Without surgery, he undoubtedly will continue to have his present symptoms, although, they may be somewhat relieved by proper dietetic measures.



5. Case VI.) Six hours after ingestion barium sulphate, showing meal held in left iliac region, the cecum apparently held in this position.

6. (Case VI.) After 24 hours, showing cecum and ascending colon held down by adhesions in left iliac region.

7. (Case VI.) After 48 hours, showing enormous accumulation of intestinal gases, with colonic stasis and the bowel held in malposition.

8. (Case X.) After bismuth enema, showing absence of bismuth in sigmoid and a patulous ileocecal valve as evidenced by bismuth in terminal ileum.

Case VII. Intractable intestinal toxemia and asthma. Severe pyorrhoea alveolaris and alveolar abscesses. Relieved by withdrawal of teeth.

Mr. J. M. B., 68 years old, was seen first, Nov. 11, 1920, had suffered from asthma for twelve years, and for the previous seven years it had been almost constant with only a few days at a time when he was free from it. He had severe intestinal toxemia. His nose and throat examined by Dr. Lynch, were pronounced negative. His teeth were in wretched condition, being nearly all decayed, with receding gums and foul breath. Two days after withdrawal of all his teeth, by Dr. Wahl, many of which were abscessed, his urine gave a negative indican reaction, and he was free from asthma. He has remained free since.

Discussion: Attempts had been made to treat his asthma along dietetic lines, but with no success until his teeth were withdrawn. In the successful treatment of chronic intestinal toxemia we aim to transform the putrefactive bacteria to a fermentative type. The constant inoculation of the gastro-intestinal tract with putrefactive bacteria from carious teeth, diseased tonsils, or infected sinuses, neutralize any such attempt, and a careful examination of mouth, nose and throat is always indicated.

Case VIII. Severe intestinal toxemia associated with arthritis of right sacro iliac joint, and sciatica, due to old abscess at site of appendectomy. Associated with this there was also, chronic cholecystitis.

Mrs. J. N. T., 33 years of age, first came under my observation, February 20, 1919, complaining of frequent head-aches with attacks of nauseau and vomiting and excessive amounts of gas in intestines. Pain in the right hip extending down the course of the sciatic nerve was almost constant and necessitated her walking with a cane. She had been married fourteen years, and while anxious for children, three abortions had been performed in the first three months of pregnancy on account of pernicious vomiting. She had had repeated attacks of tonsilitis until tonsillectomy in 1914. In 1916, she fell from a hammock, striking her right hip, and had been lame ever since. Appendectomy for an acute attack of appendicitis was performed in Nov. 1918. She had visited the principal orthopedists in the west and remained in a plaster cast for seven weeks, during Jan. & Feb. 1918. After removal of the plaster cast, her right knee swelled and became painful and she was on crutches for eight months, walking with a cane ever since. Repeated X-rays had shown a sliding sacro iliac joint, but strapping and other usual othopedic measures had failed to give relief. One abscessed tooth was removed in June 1918.

Physical examination. Well nourished and ruddy weight 162 1-4 Lungs normal, negative d'Espine sign. Heart normal Systolic blood pressure 138, diastolic 90. Liver spleen and both kidneys normal. Tenderness on palpation over region of the gall bladder and in the right iliac fossa. No tenderness in left iliac fossa. Patellar reflexes exaggerated. There was restricted motion of right hip and pain on flexion of the thigh and on outward rotation, but no pain or restriction of motion on inward rotation. Motion of left hip normal and painless. Marked tenderness on pressure over the right sacro iliac joint.

Left sacro iliac normal. Lumbar spine normal. Uterus retroverted, adnexia normal. Marked tenderness along the course of the right pudic nerve.

Blood examination: 6,786 whites; 4,540,000 reds: 70 per cent. hemoglobin, color index 0.7; Neutrophiles 41 per cent. small mononuclears 51 per cent, eosinophiles 3 per cent, transitional 5 per cent.

Urine: Slightly acid, 1036, negative except for a plus 8 indican reaction, and a few hyaline casts. Tuberculin tests and Wassermann reactions made in Chicago were negative.

The patient was referred to Dr. Hatch for treatment of the sacro iliac condition, and an attempt made to treat her intestinal toxemia. In spite of the usually successful methods, her indican reaction remained constantly heavy, and this led to X-ray of her gastro intestinal tract by Dr. Samuel, in an effort to find the cause of same. This showed evidences of adhesions in the region of the gall bladder, and the terminal ileum kinked and bound down in the pelvis with marked terminal ileal stasis after twenty-four hours, and marked cecal stasis after forty-eight hours. After exhausting all conservative methods of treatment she was advised to undergo laparotomy. On March 31, 1919, Dr. C. Jeff Miller operated and removed a thickened gall bladder with numerous adhesions to duodenum and to hepatic flexure of colon. The head of the cecum and terminal ileum was bound down in the pelvis by adhesions, and while breaking them up, a small abscess in the wall of the cecum ruptured, about a drachm of pus escaping in which was found a linen thread which had been used as a purse string suture after appendectomy the previous year. The wound in the cecal wall was closed by Lembert sutures. She made an uneventful recovery, has since been free from any symptoms of intestinal toxemia, and her urine is free from indican on a moderately low protein diet, while she has since given birth to a fine young son, with only moderate nausea during the first four months of pregnancy. All sacro iliac symptoms have disappeared.

Her sacro iliac symptoms were undoubtedly due to the fall from a hammock, but the close proximity of the small cecal abscess which was no doubt constantly draining pus into the cecum, acted as a constant source of inflammation to the sacro iliac joint and was also constantly infecting the cecum with putrefactive bacteria. In addition the adhesions between the colon and the gall bladder delayed proper emptying of this portion of the bowel. It is of interest to note in this case that the vomiting of pregnancy was controlled by overcoming the intestinal toxemia, which has been observed in many other cases. The ultimate diagnosis was reached only after a search was made for the cause of the persistent intestinal toxemia.

This case has been reported in detail as it is so unusual, and so many factors were concerned in the symptomatology that their correlation could not be illustrated otherwise. That a chronic gall bladder is often the cause of a persistent intestinal toxemia, I am fully convinced from the large number in which the symptoms clear up after cholecystectomy.

Case IX. Hyperthyroidism (?) with tachycardia and mucous colitis, associated with severe and intractable chronic intestinal toxemia, caused by a chronic appendix with numerous adhesions occluding the lumen of the terminal ileum; and rupture of the appendix, finally relieved by appendectomy and breaking up of adhesions.

Miss K. E., 58 years old, had been under treatment for five years for hyperthyroidism, when I first saw her in 1915. She had marked exopthalmos, tachycardia, pulse 149 to 169, tremors, frequent attacks of diarrhoea and a severe intestinal toxemia. There was also considerable enlargement of the thyroid gland. Her diarrhoeal attacks were considered eliminative, due to intestinal stasis from a chronic appendix with adhesions, but owing to her being such an unfavorable surgical risk, no thought of operation was entertained. An attempt was, therefore, made to treat the intestinal stasis, and intestinal toxemia and for five years a careful control of her diet was kept. She had several attacks of acute appendicitis during this time, but in spite of domestic worries and an active life as a business woman, her exopthalmos gradually subsided, the thyroid diminished in size and her pulse rate subsided to 80 to 100 per minute, but intermittent most of the time. In May 1919, she had a severe attack of appendicitis with rupture and formation of an appendicular abscess, which was drained under local anesthesia by Dr. Allen. After healing of the sinus, her intestines were even more blocked up than formerly from adhesions and contraction of same. In Feb. 1921, under ether anesthesia, Dr. Allen again operated, excising the sinus in which was found a fecalith. The stump of the ruptured appendix was removed after dissecting out all adhesions. This was a formidable undertaking, as the cecum, ascending colon and five or six coils of the ileum were matted together by organized adhesions. She had an uneventful recovery, and today has no sign of exophthalmos, a pulse of 80, which is regular, and there are no tremors, while she has gained fifteen pounds in weight and looks twenty years younger. She is able to live now on a moderately low protein diet, and her bowels have been rarely inclined to constipation since the operation. Time will not permit a discussion as to the relation of intestinal toxemia to hyperthyroidism, and I am not prepared to claim that her intestinal toxemia was the cause of her symptoms of hyperthyroidism, nor on account of failure to perform the Goetsch test and to make a determination of her basal metabolism, am I prepared to say positively that she was a definite case of hyperthyroidism. It is of interest to note, however, that I have records of four other cases with marked cardinal symptoms of hyperthyroidism, where symptoms have been relieved by treatment of the associated intestinal toxemia.

Case X. (Fig. IX). Severe intestinal toxemia, with partial obstruction of the bowel, relieved by passing an enormous tape worm.

Mr. J. G., 41 years old, when he first consulted me in Sept. 1914, had intermittent constipation and diarrhoea, with subjective symptoms of intestinal toxemia and a persistent heavy indicanuria. Fluoroscopic and radiographic examination of the large bowel by Dr. Samuel, after a bismuth enema, showed the absence of bismuth at the splenic flexure, suggestive of a new growth, but palpation of the abdomen was negative. Bismuth meal was arrested in twenty-four hours at the splenic flexure. Examination of the stools and proctoscopic examination was negative, and he was treated expectantly for two years for his intestinal toxemia, enemata at times returning clear to be followed, after taking a purgative by mouth, by copious stools. On March 15, 1916, he passed a few segments of a tape worm, and after keeping on a soluble diet for twenty-four hours, he was given two doses of pelletierine. He passed an enormous taenia saginata, the head of which was identified. I have observed the patient irregularly for the past seven years, and he has no constipation, no intestinal toxemia and no diarrhoea. I am not prepared to state that the tape worm was the cause of the occlusion of the bowel, and it would be of interest to take radiographs of the bowel now, but the patient will not consent, as he states he is well, and has been ever since he passed the tape worm, and he is not interested in the cause of his symptoms, preferring to let "well enough alone." Some may claim that it is purely psychic phenomenon, but it is not impossible for a tape worm to form an intestinal bolus similar to one formed by lumbricoids. Certainly, my experience has been that these latter are often a factor in a severe intestinal toxemia.

I have not attempted to even mention the many other causes of intestinal toxemia, nor have I mentioned the importance of considering focal infections in other parts of the body beyond those mentioned in the few cases reported; but I hope that a review of these cases will result in more careful examination of patients, with resulting greater benefit to the patient.

In closing, I wish to thank Drs. Samuel & Bowie, who have been of inestimable assistance by their radiographic examinations of most of the patients, and to Dr. Carroll Allen for his encouragement and co-operation.

SUMMARY.

1. Certain cases of intractable intestinal toxemia may be due to intestinal stasis from an anatomical abnormality, which can be relieved only by surgical measures.

2. Some cases of chronic intestinal toxemia may present symptoms of hyperthyroidism, which symptoms are relieved by overcoming the intestinal toxemia.

3. Intestinal toxemia may be the cause of an albuminuria and even of symptoms of uremia, relief of which is complete after control of the intestinal toxemia.

4. Severe pyorrhoea may be the cause of an intestinal toxemia, and indirectly the predisposing cause of asthmatic attacks.

DISCUSSION.

Dr. A. E. Fossier, New Orleans: I wish to thank Dr. Eustis for bringing up this very important subject of intestinal toxemia, and especially for reporting one or two cases showing its relationship with the various visceroptoses. He has mentioned Lane kinks and has referred to the pioneer work of Lane. We are familiar with the operation he has devised, and we also know the dangers to which he has subjected these patients in performing this operation for the cure of constipation and the so-called symptoms which accompany it. I wish to say that in my experience, based on 20 years' practice, I have yet to see the case of constipation that demands such treatment as the extirpation of a part of the bowel. I read a paper before this Society two years ago in Shreveport pointing out the injudicious use of such an operation. In the great many cases the symptoms can be ameliorated by the use of a diet which I pointed out and which Mr. Lane accepts. He therefore believes that there may be another cause for the symptoms of toxemia. I do not think it is absolutely due to intoxication. One theory that has been advanced is with reference to the circulatory disturbance we find in enteroptosis. You take the mental symptoms and others and you will find they are very much more easily explained by the circulatory symptoms than they are explained by the intoxication. The organs are down. There is irritation, and there is more or less irritability of every organ in the body. We find it in the stomach, we find again contractions in the intestines, and no matter where there is irritability we have it in the nervous system. Even the vasomotor disturbances show it. These patients have enlargement of the veins over the abdomen. A year and a half ago, when we first began this work, one of the most interesting things we found so frequently were signs simulating arteriosclerosis

Young people we found had contracted arteries until we woke up to the fact it was simply a contraction. The distribution of the blood was not in the surface. The blood was not flowing properly through the brain, and nature, in order to overcome the congestion in the abdominal cavity caused contraction of the arteries in order to furnish a freer flow of blood through the brain. Years ago in working along the same line as Lane we advanced a theory which has little by little been corroborated by many writers. It has gradually come out that the thymus was enlarged in cases of visceroptosis which showed nervous phenomena. In these patients the visceroptosis is the causation. If you take the functional neuroses you will find that many of the symptoms of toxemia have been attributed to the intestinal toxemia. Do not forget to treat your cases of visceroptosis medically, and if you do, you will get results that you cannot get otherwise.

Dr. J. E. Knighton, Shreveport: I think Dr. Eustis brings out very clearly the fact that we should not be satisfied with a superficial diagnosis. Many of these cases of intestinal toxemia have a cause behind them. We should not be satisfied to make a diagnosis of hyperclorhydria or of many other things that are the result, and he has brought out very well the point that the cause behind should be looked for, and many of these cases are just as amenable to medical treatment as a great many of them are surgical cases, and they should be sifted to the bottom to determine those cases which are surgical and those which are medical.

Dr. S. K. Simon, New Orleans: I think Dr. Eustis is to be commended for his long fight on this subject. For at least twenty years he has been fighting the battle of intestinal stasis and the clinical consequences of this condition. His ideas have been based on highly scientific grounds, which is not always true of articles that have been written on this subject.

There are fundamental facts in connection with this subject which I think we ought to recognize. One is, there can be no longer any legitimate question as to the existence of clinical symptoms the result of intestinal toxemia. We have had abundant proof in the last year or two in the relief of this condition by means of certain solutions.

In casting around for a basis to explain the results of clinical evidence of intestinal toxemia in some cases in which the x-ray shows intestinal stasis, and in other cases in which the x-ray shows to have antedated the intestinal stasis, and the reason why some cases show clinical pictures of intestinal toxemia and others do not, I have considered two factors as controlling the situation. One is the effect of the liver which is present in some individuals with intestinal stasis and missing in others. The other factor is whether the stasis is in the right or left colon. By drawing a line in the middle of the transverse colon and observing one can tell whether the stasis is largely to the right of the midline or to the left. In those cases which show a marked stasis in the colon, the intestinal stasis is more marked than in those where the stasis occurs to the left of the transverse colon alone. If you consider the anatomical arrangement of the bowel the reason for that is apparent. The large bowel is largely concerned in absorption, and the lymphatic distribution is much more prominent than in the left colon. When stagnation occurs in the right colon, the amount of toxins is greater than when stasis occurs in the left bowel, and the detoxicating effect of the liver are the two factors which determine ordinarily whether intestinal stasis will produce clinical symptoms or not.

Dr. E. C. Samuel, New Orleans: I have had the pleasure of doing most of this work with Dr. Eustis and Dr. Simon, and I must agree with what has been said earlier in the discussion insofar as the surgery of some of the cases of ptoses that you hear so much about is concerned. We have followed these cases before and after operation quite frequently, and within two or three months we have usually found the bowel down just so far after operation as it was before operation. In a very few instances it is held that the additional adhesions you have gotten from the operative interference hold the bowel firmer down in the pelvis than before.

We do not report stasis in the terminal ileum in this series until after six hours, because normally food leaving the stomach takes from four to six hours for the stomach to empty itself, and at the end of six hours our meal has passed most of the terminal ileum or one-half of it. If it exists longer than that we call it a terminal ileal stasis. Stasis of the ascending colon is only reported if we find it longer than twenty-four hours. If there is a stasis at that time, it is reported to the clinician as a stasis of the cecum and ascending colon. It is very seldom we see stasis in the descending part of the colon. If there is, there is very little attention paid to it from a radiological standpoint. What clinical significance it has I do not know. The marked backing up you see in the descending colon is also seen in the ascending colon. Patients are sent to the operating table and their appendices removed through a small button hole incision. I had a case yesterday at the Touro Infirmary where the appendix was removed through a small buttonhole incision. The patient was eighteen years of age. In three months' time he was suffering just as acutely as before. Radiographs taken yesterday at the end of six hours showed a marked low Lane's kink, with marked adhesions holding the cecum deep down in the pelvis. There should be some attention paid to the kinking of the terminal ileum of Jacksons membrane.

Dr. Carrol W. Allen, New Orleans: This subject is interesting to the surgeon as well as to the internist, and as I have operated a great many cases and have come to some conclusions, I would like to say a few words. The basis of a kink, like any band of adhesions, is a mechanical thing. When it can be relieved by supportive means, medical means, well and good. A patient does not need an operation, but in the great majority of these cases in a Lane kink and ptosis, I do not see how any mechanical support will relieve. You may benefit a patient by improving the peristalsis, by bringing about evacuation of the bowel, unloading the burden on the colon, and favoring a higher position of the colon with better drainage and circulation.

As to the mechanical effect, there is one thing which is often overlooked that has to do with the symptoms, and that is interference with the circulation as a result of the ptosis. If the mesentery of the large bowel ordinarily has a loop six inches long and should lie below the umbilicus, you get an explanation regarding the dropping of it five or six inches more, so that it lies at the brim of the pelvis, and we know where the mesenteric attachment is. That vascular loop is twice as long as it should be. Stretching of the vessels interferes with the curculation. The arteries can better carry the blood supply down to the bowel because it is propelled by the **vis a tergo,** but when we come to the venous return we have stasis and get congestion with imperfect action of the bowel favoring toxic accumulations and their absorption. When we can operate after the internist has failed, in my experience from the records I have kept, I have obtained results that were very satisfactory, and when these patients ask me what the prospects are, I usually tell them that 75 per cent. of the symptoms can be relieved by operation. We do not get perfect restoration, but about 75 per cent. of their discomforts are relieved.

To go back and refer to the history of the operation, I will say that I have only done the Lane operation of excision of the colon once. Two years ago I skiagraphed that patient and the terminal ileum was very much dilated and taking on colonic function. Consequently, I do not know that that operation is particularly to be recommended, although we do see some cases in which it is desirable. Coffey, of Portland, has done much work on that line and with gratifying results. I have sometimes modified Coley's technic as I think it is applicable to the cases, and I have followed a great many of them, and in two cases have had skiagraphs made, and whereas there was some slight fault following the operation, it by no means represented the condition that was presented before operation. The patients in a good many instances have very much improved in symptoms and physical condition. In one case of which I have notes there was a gain of thirty pounds, other report 15 to 20 pounds, and are better physically and mentally. As to the toxic side of these cases, one patient complained of headache, of a migraine character, but that has cleared up.

Dr. Allan Eustis, New Orleans (closing): Unfortunately time would not permit me to report them so I take this occasion to mention two cases that were operated on by Dr. Allen which were not amenable to medical treatment. I tried to do some good for these patients medically. They ran a persistent indicanuria. One of them had a former uremia, a toxic nephritis. After the removal of the stagnant appendix and a diverticulitis of the sigmoid, there has been a complete relief of the headache, the albuminuria, and high blood pressure.

Another case of rupture of the appendix, with subsequent adhesions, was operated by Dr. Allen. One case formerly gave definite symptoms of hyperthyroidism, i. e., tachycardia, exophthalmos, with a pulse of 140 to 160 with marked tremor. The patient was relieved of symptoms by gastro-intestinal measures. She had a ruptured appendix that subsequently gave adhesive bands resulting in operation. She has shown remarkable improvement since the operation, and today her pulse is 80 with no symptoms of hyperthyroidism.

I thank Dr. Simon for his kind words, as well as Dr. Samuel and Dr. Allen for their constant co-operation and encouragement in this work.

DIABETES AND PREGNANCY.*

By DR. I. I. LEMANN, New Orleans.

The frequency with which glycosuria is encountered in pregnancy makes this an ever timely topic. It is variously estimated that sugar is found in the urine of from 10 per cent. to 45 per cent. of all pregnant women. It is true that in some cases the sugar is lactose and in these there is no question of the existence of diabetes. This occurs more particularly during the latter days of gestation and in the puerperium. Ney (1) found lactosuria in 77 per cent of parturient women, but in only 16 per cent. of those who were pregnant. It is not my purpose to discuss here the very innocent condition nor shall I discuss methods of identifying the various sugars in the urine. I shall confine myself to the consideration of true glycosurias, namely, those cases where the sugar has been identified as glucose.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

Even where the sugar in the urine has been proven to be glucose we are not warranted in assuming that we are dealing with diabetes mellitus. This is particularly true where the glycosuria has made its appearance during the course of pregnancy and has not pre-existed it. Many of these glycosurias will be found to be independent of the carbohydrate content of the diet and the blood sugar percentage is normal and even subnormal. Such cases, therefore, are renal diabetes (innocent). They are extremely common, so common that Frank (2) regards their occurrence as normal. Novak, Porges and Strisower (3) having found two such cases consecutively were led to a similar belief that the occurrence was not a coincidence. They observed shortly thereafter five other pregnant patients with glycosuria, in none of whom was there an increase in the blood sugar and in none was the quantity of glucose in the urine influenced to any degree by variations in the quantity of carbohydrate consumed. In this connection the determination of the behavior of the blood sugar after the ingestion of a large amount of glucose on a fasting stomach and the plotting of a blood sugar curve after the method of Hamman is of great value and importance. Some months ago a lady in the seventh month of her first pregnancy was sent to me because she had shortly prior thereto begun to have small quantities of glucose in her urine. It was not difficult to show that the glycosuria had no relation to the ingestion of carbohydrates and that the blood sugar level was normal while the renal threshold was low. The blood sugar after a glucose meal rose promptly as usual and promptly fell without making a plateau at the top of the curve characteristic of the true diabetic. This patient went through the rest of her pregnancy on a liberal diet with comfort and was duly delivered of a healthy child.

Attention has been repeatedly called to the fact that in rare instances diabetes appears to be induced by pregnancy, being manifest only during the pregnant period and absent in the intervals. (Naunyn (4) Futcher, (5), Foster. (6), Joslin (7). Some, at least, of these cases may prove upon study by modern methods to belong to the group of renal diabetes but others have in the past experience developed into full blown cases of true diabetes mellitus. Thus Foster reports a case in which "there had been a pronounced glycosuria during two pregnancies which had entirely subsided after the birth of each child so that there was no sugar in the urine and no diabetic restriction was employed. During the third pregnancy there was observed not only glycosuria but also a moderate increase in thirst and following the termination of the pregnancy the sugar excretion and symptoms persisted. The woman became a typical diabetic. An attitude of caution is necessary, therefore, with regard even to my patient whose history was outlined above. The status of her carbohydrate metabolism should be investigated again while she is not pregnant and her possible future pregnancies also should be watched with more than usual care.

The general attitude of the profession with regard to the occurrence of diabetes and pregnancy together has been one of great pessimism. Offergeld (15) in 1908 reported a collection of cases in which 30 per cent. of diabetic mothers died in pregnancy or at time of delivery and 24 per cent. more died within thirty months after confinement. Naunyn (4) considered the life of the mothers much endangered and that many died in the first days after delivery of coma or collapse. Williams collected 66 cases in which 27 per cent. of the mothers died in labor or within two weeks thereafter and an additional 23 per cent died within two years. Foster (6) says: "It is now generally believed that the danger of pregnancy in diabetes is comparable to that of patients suffering from tuberculosis and severe valvular disease." On the other hand Van Noorden (8) saw no unfavorable effect of the pregnancy on the diabetes as illustrated in five diabetic women. Eshner in 1907 collected from the literature eight cases of pregnancy in diabetic women. Two of these diabetic women became pregnant three times, one became pregnant twice. No mother died in pregnancy nor in the puerperium. Three died within two years after confinement. In twenty-seven other cases in which diabetes developed as a complication during pregnancy, seven mothers died in pregnancy or puerperium, eight more within two years. Glycosuria recurred in four pregnancies in one case; in two pregnancies in three cases. It recurred during pregnancy in three other cases after having been previously temporarily present. Joslin, (7), in the second edition of his book, has reported twenty-three cases of diabetes associated with pregnancy, which he has divided into two groups, namely, mild and severe. In the ten mild cases there were fourteen pregnancies and eleven children and both mothers and children were well. Of the thirteen patients with severe diabetes nine were dead. It is not at all clear from Joslin's report in his book and his article in the Boston Medical & Surgical Journal (10) that some at least of his mild cases were really diabetes mellitus and not renal diabetes. Five at least of the ten became aglycosuric after delivery. No statement is made as to the blood sugar.

Joslin doubts the probability of the aggravation of diabetes by pregnancy. He says "It cannot yet be accepted as proven that pregnancy aggravates a diabetes. It is quite possible that the reason for a patient with diabetes becoming worse during pregnancy is simply due to the ingestion of an unusual quantity of food." Allen is inclined upon the basis of experimental work to agree with Joslin that the effect of pregnancy upon diabetes is slight.

It has even been suggested that pregnancy may temporarily improve a diabetic. Cases have been reported where patients exhibit glycosuria in the non-pregnant state but have less glycosuria or no glycosuria as long as they are pregnant. In other words their carbohydrate tolerance is increased by pregnancy. Eshner and Foster have each reported one, Joslin two such cases. I may here report a similar one from my series:

Mrs. S. F., Aged 20, consulted me December 10, 1915, because of glycosuria. The glycosuria had been discovered four and a half months previously by her family physician because she had had a pruritus vulvae. She had formerly weighed 135 pounds but had lost 9 pounds. She had been married only a few months. She was easily made sugar free and her carbohydrate tolerance was determined to be in excess to 75 grams. She became pregnant within a month of her first visit and all during the pregnancy remained without glycosuria although she ate freely of all kinds of fruit and as much as 2 1-2 ounces of bread daily. August 30, 1916, she was delivered normally without anesthesia of a seven-pound boy. Through a mistake of the nurse she ate even a sweet sherbet during the puerperium without having sugar in the urine. She went through the lactation period equally well but never ate sweets and restricted her bread more sharply than during gestation. Sugar did not reappear until March, 1917. It was again possible easily to rid her of the glycosuria and to maintain her so. During my absence in the army, 1917-1919, she exceeded her tolerance and I found her emaciated and toxic upon my return in March, 1919. She went steadily down hill, the carbohydrate tolerance decreased until it was 10 grams and below. The last months of her life were miserable and the scene was finally closed in coma April, 1920, after she had broken her diet. The child is living and healthy.

These cases of increased carbohydrate tolerance during pregnancy recall the experiments of Carlson and Drennan (11) and Carlson and Ginsberg (12). These investigators have shown that " whereas total extirpation of the pancreas in non-pregnant dogs resulted promptly in the onset of pancreatic diabetes, complete pancreatectomy in pregnant bitches near term is not followed by hyperglycemia and glycosuria as long as the fetuses are alive and placental connections are not severed. At the onset of labor the blood sugar begins to rise and characteristic pancreatic diabetes is established on completion of delivery." They believe that the internal secretion of the fetal pancreas passes through the uterine membrane in sufficient quantity to prevent diabetes in the mother. Allen (13), however, reports that he has not been able to repeat Carlson's experiments because he has found that pancreatic resection to the point of diabetes seems absolutely incompatible with the continuance of gestation. His observations lead him to the view that no appreciable quantity of internal pancreatic secretion passes from fetus to mother and he interprets Carlson's results as due to cachexia.

As to the effect of the diabetes upon the pregnancy there is almost universal testimony that it is most unfavorable. Foster (14) says: "Conception is most frequently followed by early abortion; with a minority, pregnancy terminates with late abortion; while a small percentage give birth to living children."

Offergeld's (15) figures would indicate that 51 per cent of the fetuses die intrauterine, 10 per cent. die within the first few days and another 13 per cent. die within the first year. Eshner's (9) series show that in the cases of mothers already diabetic before pregnancy, six out of fourteen fetuses died intrauterine or at birth and that in those cases where diabetes occurred as a complication of pregnancy, seventeen out of twenty-seven fetuses died intrauterine or at birth. Hydramnios is exceedingly common.

When confronted with glycosuria in a pregnant woman the practitioner has a heavy responsibility. Has his patient truly diabetes? If so, what should he do to lighten the burden and improve the chances? Should the pregnancy be terminated? Many obstetrical authorities have unhesitatingly recommended such a course as giving the best chance to the mother. There is a marked difference as to the severity of the cases and the gravity of their situation according to whether the glycosuria pre-existed the pregnancy or not, and Joslin makes two classes accordingly. Pregnancy occurring in an already confirmed diabetic is a grave complication whereas the glycosuria making its appearance for the first time during the course of a pregnancy is usually benign. The reason for this benign character may lie in the fact I have already indicated, that this glycosuria is caused by a temporarily lowered renal threshold, not by a disturbance of the carbohydrate metabolism. But even when the patient is undoubtedly diabetic and even when the diabetes pre-existed the pregnancy, there is much to be said to controvert the old time pessimistic prognosis. The newer method of treatment as championed by Allen and Joslin certainly hold out much more hope of help. Even the old authorities were not of the opinion that diabetes was necessarily an indication for the interruption of the pregnancy. Naunyn, the great leader in the study of diabetes, stressed the need of individualization and advised that abortion should be induced only when the mother's condition is such that she seems threatened in some special way by the diabetes. Allen's (16) present statement is that "termination of pregnancy is no longer a justifiable routine measure in diabetic women." The treatment of diabetes in pregnant women should follow the same lines as in the non-pregnant state. It will be found that the disease can usually be held in control about as readily as in the cases where there is no pregnancy. Only where this is not the case and where there is aggravation of the disease can we justly consider abortion. It is to be remembered that the dangers of induced labor are likely to be as grave as those of labor at term. The great danger threatening the pregnant diabetic is the same as that threatening the nonpregnant diabetic, namely, acidosis and coma; and it is in combating this, or rather in the prophylaxis of this, that the new dietetic methods serve their greatest purpose. Our attention should be constantly focussed upon this rather than upon the grade of the glycosuria and it is because the protection of carbohydrate metabolism is at the same time a protection against acidosis that we strive to keep the carbohydrate content of the food within the ability of the damaged or weakened pancreas to care for it. It is even more important to restrict the fat content of the food to the point where the oxidation processes of the body can burn it all up and leave none in the form of incompletely oxidized products—the acetone bodies—to poison the patient. Patients properly watched and properly safeguarded in this way may go on and do go on to term. The situation is somewhat comparable to that of the preparation of diabetics for surgical operations. Formerly diabetics were a *noli me tangere* for the surgeon but today it has been shown that the diabetic, when properly prepared by appropriate preliminary dieting, may be operated upon with no greater mortality than the non-diabetic.

The appearance of albumen and casts is most serious and the full development of a severe nephritis may require the interruption of the pregnancy.

At the time of delivery it is important to avoid chloroform and ether anesthesia as likely to precipitate acidosis and coma. Gas-oxygen is the anesthetic of choice. Joslin advocates and has used Cesarean section as minimizing the length and the dangers of delivery.

Summary: I. All glycosurias of pregnancy are not diabetes mellitus. Many are innocent renal diabetes.

II. All patients, however, showing glycosuria during pregnancy should remain under constant observation during pregnancy and should be thoroughly investigated after the termination of pregnancy .

III. Abortion is not to be advised as a routine.

IV. The treatment of the pregnant diabetic is the same as that of the non-pregnant. .

V. The danger of acidosis is to be avoided by the restriction of fats and by the choice of gas-oxygen as an anesthetic.

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DISCUSSION.

Dr. J. B. Elliott, New Orleans: I have seen a woman in the last seven days who bore a child two and a half years ago. She developed glycosuria in the last two months of her pregnancy. There was sugar found in her urine the following two years, and last year when the urine was examined it was found negative for sugar. A few days ago I found the blood sugar was away above normal.

Dr. Allan Eustis, New Orleans: I cannot agree with Dr. Lemann. As he was finishing his paper regarding nitrous oxid anesthesia, he may not have given it much thought, but he contradicted certain statements made in the earlier part of his paper. Nitrous oxid is an acid, and by inhaling it you lower the alkali reserve. If you give an anesthetic, ether is preferable to nitrous oxid, but local anesthesia is preferable to either of them, in diabetics.

I recall two diabetic cases in which it was necessary to operate on account of an emergency appendix. The surgeons, both preferred nitrous oxide on account of the fear of gangrene from local anesthesia, and both of these patients went into a prompt coma, with death, which would not have happened if local anesthesia had been used.

Dr. P. B. Salatich, New Orleans: In making routine examinations after delivery we notice so many patients who have one-half or one per cent. of sugar in the urine for one or two days and then it disappears. I recall one woman who at the time she was about to wean her baby came down with a bad appendix, and examination of her urine showed 3 per cent. sugar. I said to the pathologist, we cannot operate on this patient with 3 per cent. sugar in her urine although she does not look sick. I said she is not nursing, and she has not nursed her baby for two or three days. Her breasts are very full. The pathologist said that is a little too much and he would not advise operating on a patient with 3 per cent sugar. He would let her wait a while. The patient, being a poor woman, I sent her back home, and that when her breasts were dry she was to come back and if I found that her urine was free from sugar I would operate on her. In two weeks she came back with her breasts dry and absolutely free of sugar.

Dr. E. L. King, New Orleans: I think the point brought out by Dr. Salatich of finding sugar in the urine of a woman after delivery is very important. However, it is lactosuria and not true diabetes. The same is true in the latter two months of pregnancy when the breasts are getting ready to perform their function and we find sugar in the urine. We very seldom find an obstetrical case at the Charity Hospital in which pregnancy is complicated by the presence of sugar in the urine. There may have been one occasionally, but since I have been on the service we have not had any. I looked that matter up in Hirst and various other textbooks. Hirst says he does not find Fehling's solution is reduced in more than 1 per cent of his cases, in his routine office examination of pregnant women. He quotes a series of 715 cases of true diabetes in women, and only three of these true diabetics were pregnant women.

The termination of pregnancy comes up occasionally, and as Dr. Lemann mentioned the termination of pregnancy by Cesarean section is advocated not only by internists, but by such men as DeLee and others to relieve the strain, so as not to allow these women to go through a long and tedious labor.

Dr. I. I. Lemann, New Orleans (closing): I wish to emphasize the viewpoint of the great danger of diabetes. We all have a notion that the danger lies in the swamping of the body economy with an excess of sugar, but the danger of diabetes lies in the incomplete combustion of the fats, and we have the curious phenomenon that in the presence of an overabundance of sugar in the tissue in the circulating blood there is incomplete usage of that sugar and incomplete combustion of the fats. Some one has said that the fats are burnt in the fire of the carbohydrates, and where the carbohydrates are not burnt the fats are incompletely burnt. There the danger lies for the pregnant woman, and there the danger lies for all diabetics. So that we are watching the grade of the blood sugar and watching the grade of the glycosuria, not so much because we are afraid of the excess of sugar in the body, but because we know an accumulation of the excess of sugar means incomplete combustion of the fats. Again, the safeguard of the pregnant diabetic woman lies more in the restriction of the fats than in the restriction of the carbohydrates.

I was not aware of the point Dr. Eustis made, and I shall be glad to think it over. Undoubtedly the safest anesthetic is a local anesthetic. I have heretofore been under the impression that gas oxygen was preferable to ether; certainly is far preferable to chloroform which must be absolutely tabooed.

THE MANAGEMENT OF A SMALLPOX OUTBREAK*

By DR. JOHN CALLAN, New Orleans.

When the transfer of the Health Department from the old regime to the new took place on December 8, 1920, a smallpox situation had existed here for some time.

Immediately a crusade of vaccination was started. A faulty system had existed in New Orleans for many years—the parochial and private schools and the higher institutions of learning had not demanded a vaccination certificate as an entrance requirement. Through the powerful assistance of his Grace, the Archishobp of this Diocese, and of Fr. Twellmeyer, his Supt. of schools, and Fr. Carra, his Supt. of Asylums, and Dr. Dinwiddie, President of Tulane University, and the Presidents of Straight University and New Orleans University, these institutions were very quickly attended to. With the aid of the physicians of the Board of Health and the great number of physicians located in these various church parishes, the vaccinations were very promptly done. A follow-up was made to catch the failures and in that way we were enabled to reach a large proportion of the population of school age. Physicians all over the city began vaccinating among their clientele, and as every focus of infection showed the physicians of the Board of Health followed, vaccinating. Intelligent lay inspectors traced the cases back to their places of employment and to their friends. Many concealed cases were found by these men. The vaccination in each focus, as a rule, involved the vaccination of the people of the square in which the focus existed and the eight surrounding squares. Interesting data have been gained by this system, accounting for the development of cases far from their infecting source. All employees in the place from which the case was traced were vaccinated. On December 8, when the new forces took charge, there were 64 cases in the Isolation Hospital and 8 cases domiciled in houses. This number increased until about February 1, when there were 113 cases in the Isolation Hospital and 22 cases in 20 domiciles. Whenever a case could be kept at home, under proper care, we permitted this, otherwise it was removed to the Isolation Hospital. We met with no opposition in individuals, although the anti-vaccinationist worked his typewriter and pen overtime in communications to the Health Office and the newspapers. Reporters importuned us to answer these communications and were rather insistent about it. I took the firm stand that I was too busy to enter into such silly discussions, but, however, if any of them wished to discuss the subject with me that I would discuss it with them in the Isolation Hospital at the bedside of those suffering with smallpox. None accepted the ground on which I was ready to enter into a discussion, they preferred a long distance discussion where they thought they were in a bombproof place of safety.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

The Isolation Hospital is built in two distinct buildings with no intercourse between them; one half has a capacity for 100 beds, occupied by the smallpox patients, the other, 100 beds, occupied by the venereal patients. Because of the gravity of the situation, and of the way in which the venereal problem was handled, I immediately ordered the venereals out of the place but could not get them out until December 22. I would have more air and space for the small pox. On Dec. I entered this place for the first time, saw the congested condition and as a first measure of relief, I ordered that patients should sleep alternately head and foot to obviate cross infections. I had instructed the vaccination of every one entering this place, even though they had come to the place with smallpox, this to be repeated every day for four days. This was done to protect those entering the hospital through errors of diagnosis. Some might figure that observation rooms or wards should be had for such cases. My reasoning led me to a different conclusion, for here in our city four wards were necessary, two for the black, male and female, and two for the white male and female. I reasoned that if I had gotten two patients, one with and one without smallpox, that the non-smallpox case was exposed, and after all the only means that we have to prevent this disease is vaccination. This would also necessitate a separate corps of help and nurses. A tremendous expense that after all gave no protection.

After December 22 all our factors were at work. That of obviating cross infection, that of vaccination and that of more cubic air space for the patients. At that time ten days had elapsed from December 12, we began to observe cases were drying up quicker, many cases about the middle of the vesicular stage, when the vesicle becomes milky and opaque, there seemed to be a sudden cutting short into the pustular stage, and cases began to dry up quickly. This was given more close observation and was attributed to the influence of the vaccine, the mortality dropping from 24 in the first 100 cases to 5 in the next 100, where it has about remained.

We have tried the intravenous injection of the filtered vaccine in one case, a profoundly toxic one, but without result. On the second day we were encouraged in noticing a marked drying, but the next day the case died. This filtrate was used to vaccinate some children. It proved to be inert. There are many interesting problems which are yet to be settled. I would say first the intravenous injection of vaccine as a curative agent. Personally, I believe it will do well, and secondly the duration of the period of infectivity, this can be settled by animal experimentation. The management of this outbreak was done without the employment of guards on the houses which, to my mind, is necessarily inefficient because of back door escapes.

Vaccinate, vaccinate the contacts, follow up your vaccinations, chemical disinfection, sun, light and air, these are the great factors. Old theories die hard, and that of fomites certainly shows a vitality that is remarkable. As knowledge of disease after disease grows, fomites get staggering blows. I am not a strong believer in fomites as a means of conveying smallpox. If so the fomites must be very fresh, not long from the patient. When science unfolds the microorganism, I am sure we will find one of extremely low and short-lived vitality from its native habit. Insect transmission or intermediary hosts do not appeal strongly to me.

DISCUSSION.

Dr. J. C. Gremillion, Alexandria: Some years ago I was connected with the Board of Health at Alexandria for ten years. We found at that time that if we could detect a case of smallpox before the pustular stage and vaccinated other members of the family, we never had the disease to occur in that house. If we did not detect a case in the pustular stage the vaccination did not protect. The question arises, were those already infected, or did the vaccine break the infection they had? That is a question I would like Dr. Callan to answer. The patient the doctor had in the hospital, who was immune, is very interesting, and that explains why smallpox is so much less virulent than it was before vaccination took place. If a mother is vaccinated, she confers a certain immunity to her child, and that is why smallpox is less virulent today than it was years back.

Dr. Joseph G. Stulb, New Orleans: I wish to explain the high mortality in 1920 in order to compare it with the period of my connection with the Board of Health in 1917, 1918, and 1919. My mortality was 5 deaths in three years.

Regarding the birth of the child in the isolation hospital, I will say that I was very fortunate. I had two white men with confluent cases of smallpox with lesions of the heart, edema, showing kidney complication, and furunculosis. I discharged these two women well from the institution. Two had a live baby in the uterus, and one month after leaving the institution the mother bore a healthy live child. In so far as the birth of the child in the isolation hospital is concerned, I would like to ask Dr. Callan how many days had the woman had smallpox before being admitted to the Isolation Hospital? This will bring out some very nice points. My experience with the Board of Health has been that I was always to be called in on the tenth or eleventh day to make the diagnosis. It was very seldom that a physician would report a case to the Board of Health on the appearance of the papular eruption. The eruption would always be pustular, and that would be in and around the ninth day. Two or three days would elapse before umbilication would take place.

Dr. M. H. Foster, Alexandria: The City of Alexandria has one of the best co-ordinate health departments in the state as attested by a specialist on city building. Mr. Allen D. Albert, made an analysis of the health situation and gave out figures from his office stating that Alexandria enjoyed the lowest mortality rate that he knew of. We had the unique mortality rate of 7.8 for white per 1,000, whereas the average urban mortality in this country is 15.

In regard to health work as a protection against smallpox in the community, I have noticed two difficulties. One is from the antivaccinationists, and the other is the customary discussion among the doctors of the communities as to whether we have smallpox or chicken pox. Difficulty encountered with the antivaccinationists, I am glad to say, is diminishing very much in our city due to better vaccine and better methods of application. I think the arm should be aseptically protected after being aseptically vaccinated. The custom among the physicians of the communities is to kill valuable time before taking active precautions by discussing chicken pox and smallpox.

Some years ago, a doctor was called from Alexandria to settle a discussion as to whether an epidemic was chicken pox or smallpox. Physicians were divided on the subject. The doctor's bill was $100.00. Recently, a man doing genito-urinary and dermatological work was called to settle the same kind of discussion. I have had no difficulty in convincing myself that the disease was smallpox, and routine vaccination was done in the community, and the condition promptly disappeared.

Dr. John Callan, New Orleans (closing): I mean by infectivity the extreme period of infectivity. Nearly all authorities agree that in the period of invasion the disease is infective, and that most of these cases will continue until the stage of desquamation is complete. We live on that tradition in dismissing our patients. We want them free from blemishes. We want them clean before we let them out. That is what I meant by the long period of infectivity.

Regarding the woman referred to, I do not know how many days she was sick, but I think it would be wrong for men to be in doubt about the diagnosis until the suppurative stage is reached. I must expect early reports from physicians if they expect me to do any thing with these transmissible diseases.

Dr. Foster raised an interesting point, namely, there is more or less confusion existing between varioloid and varicella. Any one reading the history of variola will find that doctors have been confusing varicella and varioloid which is a word that is not being used much now in the literature, and I am skeptical of any varicella in the adult. We must prove that it is not smallpox. I think the safety of a community lies in taking that stand.

If one reads up the history of isolation hospitals the world over, it is amazing to see how many things get into an isolation hospital—everything from tuberculosis to appendicitis, and you wonder why. The why of it is because these are peculiar cases, and anything springing up in a house, unless it is a broken leg that is objective, is better and safer under isolation in an institution.

One of the puzzling cases was a young negro about 19 years of age. I think he would have puzzled any faculty. They got a report at the office. I knew two physicians were debating about the diagnosis. One of our men was sent to see him, and I said to him one day why dont they settle it? We cannot have that doubt going along. It was finally decided that he had smallpox. Two or three days later I got a report from the hospital to the effect that it was a case of measles.. I go down to the hospital every Sunday evening. I do not want anybody to go away with the idea that I am treating smallpox; I am only managing to give directions about these cases. As soon as I saw the negro I remarked to the superintendent that no wonder they were confused over his disease. He looked in surprise when the black skin swelled up. He got over the active bumps that were on him, and every time a fellow's finger ran over an active bump on that swollen skin he was sure he felt the shock. I think it would have fooled anybody. We vaccinated him, followed our rule, and sent him out all right. He did not get smallpox. That brings us to one point about observation wards. We have no facilities for observation wards. We need four of them.

After all, the only agent or measure that I know will control smallpox is vaccination, and we have followed it out, and only one case came in with an error in diagnosis. She developed a light fever and a few papules, although she had a successful vaccination.

These are interesting stories of cases, and I often think that when they put me in the health office, if they would lock me up in the isolation hospital, I think I would know more about smallpox.

ACUTE OSTEOMYELITIS.*

By ISIDORE COHN, M. D., F. A. C. S., Professor of Clinical Surgery, Tulane University.

A great deal has been written during the last few years on the subject of traumatic bone lesions which have become secondarily infected with a resultant sequestrum formation—such have been erroneously called osteomyelitis. These should be considered more properly under other heading.

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*Read before the Orleans Parish Medical Society, October 24, 1921.

Very little has been written on the subject of acute hematogenous osteomyelitis during the past several years. Osteomyelitis is a crippling disease when not recognized early. Many have undergone numerous operations because of the failure to recognize the true condition sufficiently early to prevent sequestration. For the above reasons this disease presents many problems which should interest the surgeon, pediatrist, internist, and orthopedist alike.

It may be well at the outset to state certain convictions on which this paper is based. Though many of the ideas are not new they may prove worthy of consideration.

(1) Osteomyelitis is a blood borne disease. (2) It localizes primarily in the medullary canal. (3) There are no early X-ray findings on which a diagnosis can be based. (4) Early diagnosis must be made if we expect to cure the patient without prolonged treatment and multiple operations. (5) The early operative findings may be only a fat necrosis of the medullary contents without frank pus. (6) Early operation should give almost instant relief from pain, a subsidence of temperature, and an early recovery, with perfect restoration of function (7). Early operation should not be followed by sequestrum formation (8). Early diagnosis and operation should remove osteomyelitis from the class of chronically disabling diseases.

That osteomyelitis is a blood borne disease has been accepted by all who have written on this subject since Lexer's work. Trauma plays an important etiologic part in the production of the disease. If it is accepted that it is a blood stream infection the early manifestations should be constitutional in character and in this respect we are not disappointed. Fever, chill, at times malaise and localized pain over the shaft of one of the long bones are the outstanding characteristics. Redness and localized edema often surround the area of tenderness pointed out by the patient. If to the above syndrome we add leucocytosis, which is usually marked with a differential count showing a proportionate polynuclear increase, the diagnosis of osteomyelitis is indicated.

The X-ray is of negative value here. In the early stage when we are dealing only with nature's response to the infection, by the determination of a greater amount of blood to the part, the pain is due to the increased intra-medullary pressure. The early pathological picture is one of fat necrosis. These changes are not evident radiologically. The X-ray can be of service by showing a difference in density of the structures involved. Before bone destruction has occurred there is no difference in the density, hence we should not expect to find evidence of rarefaction, and as a mattr of fact we do not find such changes. If we wait for such evidence before operating we will most certainly have to deal with a sequestrum. Simmons, after a study of 97 cases agrees that the X-ray is always negative at this stage.

Having determined on the diagnosis it is necessary to operate at once. The operation should be done as quickly and with as little trauma as possible. There are several points to remember: The bone should be approached by the most direct route without doing injury to important structures; where possible approach in the inter muscular planes is preferred. If one finds pus under the periosteum he should not stop, but proceed to open the medullary canal as the infection has reached the cortex through the Haversian system—the infection is primarily within the canal. The approach to the medullary canal is best done by making use of motor-driven instruments, the drill or trephine. Make a sufficient number of drill openings, after which the several openings are connected on either side by a motor-driven saw. In this fashion as much of the cortex can be removed as is desired (Figure 1) By the above technic we avoid the great amount of trauma incident to the use of the gouge, the chisel and the mallet.

The importance of this last statement cannot be stressed sufficiently.

The importance of fat embolism in connection with bone trauma is neither sufficiently understood nor appreciated.

Caldwell and Huber in 1917 discussed the subject in **S. G. O.** in 1917. The work of Busch done in 1866 is reviewed in the above mentioned article.

Busch showed that bone lesions are associated with fat emboli, that injury to the marrow results in fat emboli, and further that these emboli, are carried off by way of the veins. Ribbert (quotation from Caldwell and Huber) found that by striking the bones of the leg of the rabbit a series of blows with a mallet, a pulmonary fat embolus was produced. Warthin reported eight fatalities from fat embolism following fractures. Bergemann as early as 1910 admitted the possibility of fat embolism resulting from jarring of bones and hence suggested the possibility of dispensing with the use of the chisel in surgery altogether. A greater appreciation of the danger of fat embolism following the use of the chisel and other similar instruments which jar and traumatize bone certainly should impresss us with the necessity of minimizing trauma, and this is accomplished by motor-driven instruments.

By the above method the canal is opened rapidly. One may only find a few fat globules. This and not frank pus is evidence of an early diagnosis. At this point one may by the injudicious use of the curette or other instruments do great damage. The object of the early operation is to relieve tension and to provide free drainage. This is accomplished by simple opening of the canal.

The curette may and probably often does great damage, by injuring the endosteum, the active bone cells lining the pipe stem bones. These are the cells on which we are dependent for regeneration of bone at this level.

This is not the only danger, we may injure the nutrient vessel, which supplies the greater portion of the shaft. Such injury may result in massive sequestration.

It is only necessary to put in a pack of Dichloramine T, or if one prefers he may Dakinize. Personally I prefer the use of Dichloramine T as it is simpler and equally as effective.

The results obtained by the above method of treatment are gratifying—usually there is immediate relief from pain—the temperature drops to normal and the cavity rapidly heals like any other clean wound. There has not been a secondary operation in any of the cases which I have thus treated. The cavity fills up and after a period of one year the defect in the bone is so completely regenerated that radiologically one cannot see where the defect has been. (See Figures II-III).

We have seen the defect in bone made by a trephine completely replaced by new bone from the endosteum in experimental animals. I quote from an original paper published in 1916 on the subject of "Bone Repair" (**S. O. G.**, Cohn and Mann):

"A defect was made in one side of the shaft with a trephine. On one leg the periosteum was sutured over the defect and on the other leg we removed the periosteum in the neighborhood of the trephine opening. The animals were sacrificed after seven, nineteen and seventy-six days respectively. After seven days the edges of the old bone gave no evidence of a reparative process, except in the region of the medullary surface of the bone. The trephine opening is filled with a delicate connective tissue plug, many of the cells being elongated spindle cells. At some distance from the trephine opening on the shaft underneath the periosteum, and hylane cartilage. The endosteum opposite the trephine opening also shows activity from irritation.

After nineteen days the inner half of the trephine opening has become completely filled up with bony trabeculæ arising from the medulla. The plug of connective tissue above is being invaded by proliferating subperiosteal blood vessels.

The subperiosteal proliferations of bone has almost reached the region of the trephine opening.

The seventy-six day specimen showed the trephine opening closed by bony trabeculæ which have grown up with trephine opening from the endosteum. The difference between the specimen on which the periosteum was left intact is that the "defect is filled up to a much greater extent."

CASE REPORTS.

Case of P. E. C. Examination November 1st, 1919. Diagnosis: Acute Osteomyelitis.

I was called to see patient November 1st. 1919 at 6 P. M. The following history was obtained.

Patient had been in bed since yesterday morning (October 31) with temperature of 103. Mother had noticed some redness over the shaft of the tibia (left leg) marked pain on pressure. When seen by me his temperature was 102.

Examination: Heart and Lungs—negative. Throat—negative. Abdomen—negative. Leg: On the lower third anterior aspect of left leg there is an area of redness about three inches in the long axis of the leg. The leg was tender to the touch in its entirety. A diagnosis of acute osteomyelitis was made and the patient was taken to Touro for an immediate operation. Blood count: 12,000, Poly, 83 per cent.

Operation: Ether anesthesia, Miss Armstrong.

Operator. Isidore Cohn.

An incision was made about four inches long over the anterior inner aspect of the left leg, periosteum was retracted, and with the aid of the motor drill, three drill holes were made in the shaft of the tibia. With the motor and saw a bridge of bone was removed. The only thing found in the medullary canal was fat globules and blood. Dichloramine T and a rubber drainage tube were introduced down in the medullary canal. Two silk worm gut sutures were introduced into the skin. Simple dressing applied. Patient returned to bed in good condition.

Post Operative Course: Temperature dropped to normal the morning after the operation, and at no time after that did it rise above 99 3-5. The wound was dressed on the fourth day, there was considerable ooze when the pack was removed. A similar gauze drain with Dichloramine T was introduced into the depths of the wound. He left the hospital on November 6, five days after the operation. Dec. 12: The wound has almost healed, and healing has been from the bottom. There is no pain and patient is walking with a stick with no discomfort. August 18, 1920: No pain in leg. No discomfort. There has been no discharge from the wound since patient's discharge in December.

Examination: The scar is broad, painless. Under the scar area it seems that the defect is completely filled by a material of density almost identical with the surrounding areas. There is a slight cortical thickening beyond the area of scar.

X-ray reports following operation: Figure 1. Radiographic examination of the left leg of Mr. C. shows evidence of a defect in the shaft of the tibia at the junction of the middle and lower third with beginning bone deposit in this area. There is no evidence of any bone disease at the present time. Figure 2. Radiographic examination of the leg shows the tibia to be in good condition at this time. Some thickening of bone at the junction of the middle with the lower third. (Eight months after operation).

Case of E. S. Acute febrile reaction—pain in the leg, localized areas of tenderness over the middle third of the shaft of the tibia. Leucocytosis and polynuclear increase. Immediate operation same type as P. E. C. Convalescence in every way the same as the previous case. Figure three illustrates final results.

Patient was exhibited on October 25, 1921, showed small linear scar on the anterior aspect of the leg which is flush with the surface of the skin. No apparent difference in both legs.

X-ray one year after operation. Radiographic examination of the right leg of Mr. S. shows a moderate thickening of the middle third of the shaft of the tibia. There is, however, no evidence of any old diseased process of the tibia further than this.

The above cases illustrate the value of immediate operation, evidenced by relief from pain, the subsidence of temperature, rapid uninterrupted recovery of perfect function, as well as complete regeneration of bone.

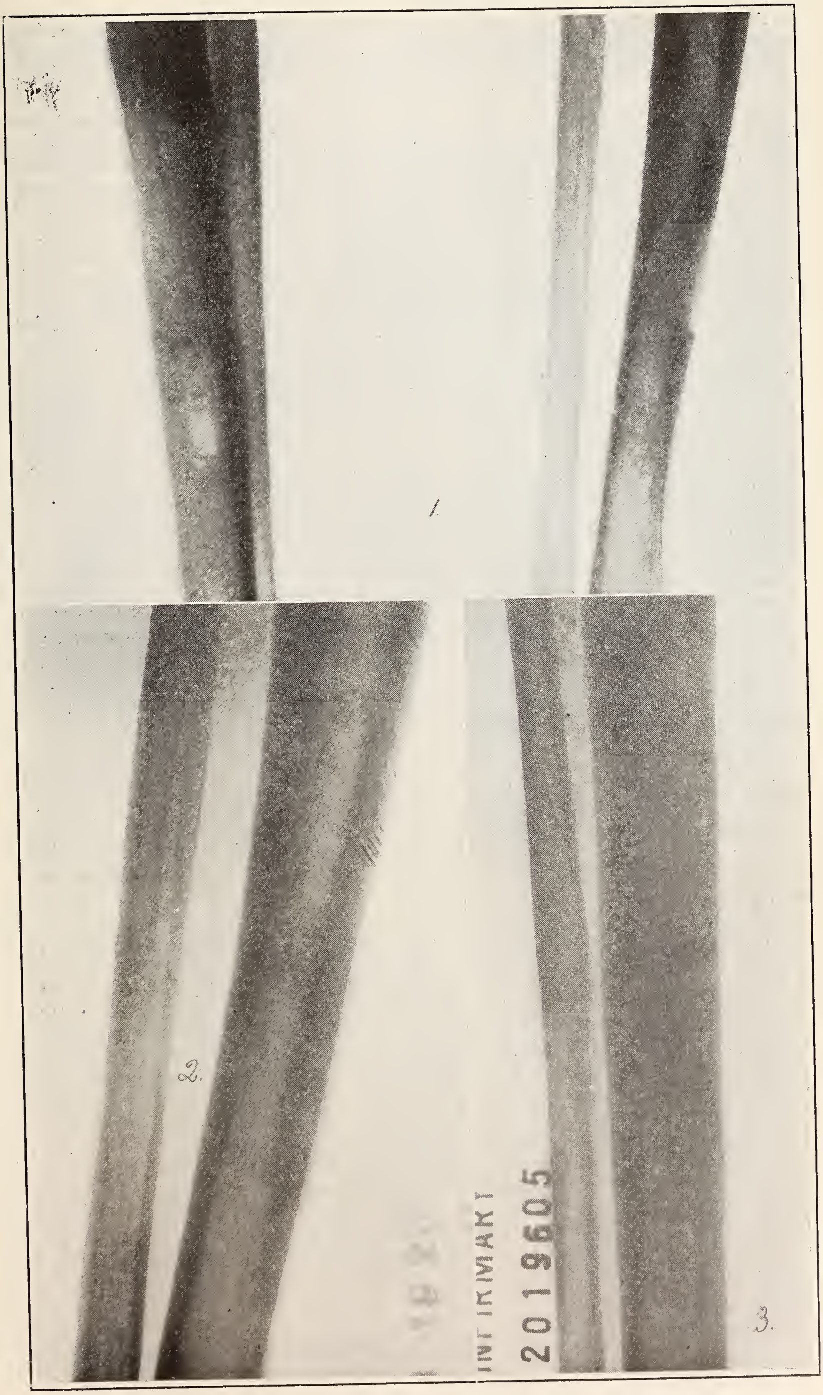
The following case with many others like it, might be of value to show the disadvantage of delayed diagnosis.

History of Case A. L. Examination by Doctor Banber.

Complaint: Slight cough, right leg swollen from under knee down. Pains in small of back. Temperature every night. Diseases: measles. Flu, 1918.

Child awoke one night two weeks ago with pain in the right leg. Thought pain was due to having played baseball.

Examination: Right leg is swollen, very painful calf muscles. Child referred to Doctor Cohn for examination. The examination



1. P. E. C. shows opening made in cortex with motor drill and saw.
2. Result eight months after operation.
3. E. S. One year after operation. Shows complete reconstruction of cortex without evidence of previous bone disease.

DR. COHN'S ARTICLE.

revealed the following: Swelling of the outer side of the right leg particularly over the upper portion of the fibula. There is a mass, hard tender to the touch which extends over the middle third of the leg up to the popliteal space; there was at least one inch difference in the size of both legs. Palpation anywhere along the shaft of the fibula caused pain. A diagnosis of acute osteomyelitis was made, X-ray was requested and an immediate leucocyte and differential requested. Total 16,200; differential, 82 per cent. poly. X-ray revealed rarefaction of the upper fourth of the fibula. Immediate operation was done. Patient was first seen by me at 10:45 A. M. operated 12:30 the same day at Flint Goodrich Hospital, Operative findings in the case as follows: Under ether anesthesia (Doctor Jones), Assistant, Doctor Pitkin, incision beginning at the level of the head of the fibula extending downward about six inches. Incision made directly through the muscle, immediately large quantity of pus was found—at least six or eight ounces.

The periosteum had been perforated by the infection of the fibula. With the hand introduced it was noted that the infection extended up to the epiphyseal line and had completely separated the shaft from the epiphysis. With a motor drill the shaft of the fibula was opened and pus was found. This upper portion of the fibula was so completely infected that it was necessary to resect the upper four inches. This was done with a motor saw. Small bleeding points were ligated, and Dichloramine T pack was introduced. The skin and muscle over the pack was sutured with silk worm gut sutures.

Many other cases of this type could be cited to illustrate the results of delayed diagnosis, as well as incomplete operation. Sequestrum formation, the death of the entire shaft of the bone or death of the patient from sepsis, at times may be the outcome of delayed diagnosis.

A report of cases seen late in the disease will probably be made.

Metastasis often takes place and any of the long bones may be the seat of metastasis. This is illustrated by the following case.

Baby A. Diagnosis: Acute Osteomyelitis. Patient referred by Doctor Butterworth. Sunday, October 5th, 1919. Mother noticed a mass on the right side of the chest a few days ago; she brought the child to Doctor Butterworth for examination. His examination revealed nothing except this mass on the right side of the chest wall. Leucocyte count was made by Doctor Neff 24,000, poly 83. I was asked to see the child. My examination revealed a mass about 1-2 inch in diameter above the right nipple, mass was soft, fluctuant, not adherent to the skin, very tender to the touch. When the mass was papated it was under the pectoralis major muscle.

Under ether anesthesia by Doctor Caine, incision was made in the skin, and the fibres of the pectoralis major muscle were separated, incision was then made in the axilla so as to allow free drainage. Dichloramine T pack was introduced, rubber drain introduced into the wound. Child at the time had temperature of 104 degrees, next morning it had dropped to 100 degrees, child was allowed to go home from Touro. They returned to my office for dressing on October 8th, at that time temperature was 101, it was noted that the right leg was swollen near the ankle, there was redness, the leg was flexed on the thigh, and there was a great deal of tenderness to the touch. Father was advised to take the child to Touro for an immediate operation.

Ether anesthesia, Miss Armstrong. Shaft of the tibia was exposed and a large quantity of pus was found in the soft parts around the ankle. Shaft of the tibia was trephined and pus was found in quantity—the cortex of the shaft was removed for a distance of about three inches until apparently healthy bone was reached. Dichloramine gauze pack was introduced in the medullary canal. Silk worm gut sutures were introduced.

Post Operative Course: Temperature dropped to normal in 48 hours—child's appetite improved—pain seemed entirely relieved. First dressing was done on the 5th. day, no pus was found and there was less swelling of the leg and foot. Wound was washed with ether and a dichloramine gauze pack was introduced. Patient was then allowed to leave the hospital and return to the office for dressing and inspection. When last seen the wound was granulating and seemed greatly improved.

The child was apparently doing well as the previous records will show. She was allowed to leave the hospital. The parents asked to be allowed to have a doctor in the country take care of the child. They were allowed to take the child home on the condition that they would return at least once a week so that I could dress the wound. At the end of this time they returned, the leg was very much swollen and there was evidence of a peri-articular infection. They were advised to take the child immediately to Touro for operation. This was done. Under ether anesthesia an incision was made over the ankle on both sides. The wound was packed with dichloramine T and the child returned to bed. Since that time the improvement has been slow, but noticeable. Child has gained in weight and at the present time, December 13, the wound is almost healed.

May 24th. 1920. Office. 2 weeks ago father noticed a small blister on leg. Yesterday a small sliver of bone came out.

There is a sinus on inner aspect of leg near lower portion of old operation scar.

The crippled on the streets, disabled as a result of a delayed diagnosis should be the most eloquent plea for early diagnosis and proper treatment of these cases.

DISCUSSION.

Dr. Matas: Though I have come too late to hear Dr. Cohn's paper I am sufficiently familiar with his studies and original research in bone pathology, through our association at Touro Infirmary, to be willing to endorse any conclusions he may have arrived at on the subject of acute osteomyelitis. The importance of this subject cannot be stressed too often in medical gatherings such as this in which the professional surgeon and general practitioner meet for mutual improvement. There are few surgical diseases in which a prompt diagnosis is more telling in its effect upon the future outlook of the patient than this. It is upon the early diagnosis and the surgical intervention that follows it that the fate of the limb and often the life of the patient depends. Delay means death to the bone: more often of the long bones—tibia, femur, or humerus—and with its destruction in part or in whole, a mutiliation or deformity will follow that even the most skilled efforts of surgery may fail to correct. Delay in diagnosis and tardy intervention always mean at least great suffering, protracted or permanent disability and danger to life. The danger to life is not only from the primary focus, but from the secondary metastases. On the other hand, the relief and security obtained by prompt drainage is one of the happiest and most striking examples of the benefits of timely and judicious surgery. Hence it may be safely said that the fate of the limb and of the patient lies largely in the hands of the medical man who first sees him. As the general practitioner or family physician is usually the one first called to the bed side, it is upon his shoulders that rests the greatest burden of responsibility. That the diagnosis of acute osteomyelitis in its incipiency is fraught with difficulties and perplexities is only too well proven by the large number of cases that come to operation, long after the destruction of the bone and irreparable damage have occurred. The most frequent source of error lies no doubt in the confusion of a primary epiphyseal infection in close proximity to the joint and acute infection of the joint itself as most often occurs in acute inflammatory rheumatism. A careful examination, however, will demonstrate that the area or focus of the greatest tenderness and pain on pressure, is not in the joint. but outside of it, in the bone immediately above or below it, and that the pain and tenderness in osteomyelitis radiate away from the joint and not towards it. The effusion in osteomyelitis is a secondary phenomenon and is small in comparison of that of acute synovitis; furthermore the joint involvement in epiphyseal osteomyelitis is primarily monoarticular and not poly-articular as in rheumatism. The pain and constitutional disturbance in osteomyelitis is most violent. Dr. King has just spoken of bone felon and those of us who have experienced the distracting throb of a felon can realize how this pain is multiplied a thousand fold when the same affection attacks one of the long bones. The X-Rays are of little or no value in the differentiation of the first stage of osteomyelitis, nor is the blood picture. There are other conditions that may simulate acute osteomyelitis, especially in children who are its chief victims—infantile scurvy, gonnorrheal arthritis of nurslings, (complicating Neisserian ophthalmia or vaginitis), acute arthritis deformans,—but in all of these the joint is the storm center and not the bone. From all this it is easy to understand that reasonably confusion and doubt should often arise even among experienced men and that the practitioner often prefers to test the diagnosis therapeutically rather than surgically. It is easier to try the salycilates, the cold-tar derivatives, and anti-rheumatic drugs before deciding upon an operation. To test the diagnosis by the administration of anti-rheumatic specifics is often spoken of as giving the patient "the benefit of the doubt." But to adopt a therapeutic test which means delay in demonsrating the efficacy or inefficacy of the drug is a perilous practice in a disease so rapidly destructive and disabling as acute osteomyelitis. What I understand as giving the patient "the benefit of the doubt" in all grave and menacing cases is to explore promptly, to expose the suspected focus by a properly made. liberating incision which will relieve periosteal tension.—drilling into the bone itself, if necessary, to give issue to pent up, virulent exudates. If the exploration should prove negative, no harm will be done if the incision is made aseptically, whereas temporizing and procrastinating with drugs or other treatment may prove fatal to limb or life, or both.

I thoroughly agree on the point stressed by Dr. Martin that the drastic procedures adopted for a number of years for the relief of bone tension in acute osteomyelitis were unnecessarily severe and were responsible for the greater frequncy and mortality of the pyemic metastases which are peculiar to this disease. We have learned to appreciate in this, as in many other acute infections, that the natural defenses can be trusted, in a large measure, when they are given an opportunity to display themselves by the mere act of drainage and relief of bone tension. At one time, nothing could satisfy the surgical conscience but the total removal and extirpation of the infected focus and the neighboring areas. In this way the whole length of the bone was guttered and the whole narrow canal was curreted and stripped of its contents. This procedure in dealing with the long bones, such as the femur, humerus, and tibia, when acutely inflamed, was no small operation and it is not to be wondered that septic and fatal metastases followed in many cases by opening up large, new avenues for infection. The recognition of this danger and a greater reliance on the natural defenses has brought about a most salutary result in surgical treatment of other great infections in the acute virulent stage, as in peritonitis and epidemic influenzal empyema. This greater conservatism has not only brought about the most salutary results, but has simplified the task of the surgeon so that in acute osteomyelitis we simply relieve bone tension at the primary focus by incising the periosteum and draining the marrow, if necessary, by drilling the bone sufficiently to give issue to the pent up exudates. By thus limiting the intervention strictly to the primary focus, the object is attained with a minimum of trauma and with the least danger to the patient.

In speaking of the dangers of metastases of bone pyemia, I must refer to another phase of the subject which has been scarcely recognized. That is the peculiar **elective affinity** of the staphylococcus pyogenes for young growing bone tissue. This may be spoken of as a manifestation of organotropism. We have been in the habit, as clinicians, since the days of Ogston and Rossbach to regard this organism as the essential bacterial cause of the disease. But it is quite evident from clinical observation alone that this organism, which is causally associated with so many different infections, is only a genus of species of a widely difused pathogenic organism susceptible of many variations or strains which show their specificity by their elective affinity for certain definite tissues. In this sense the staphylococcus aureus is like the streptococcus and the pneumococcus and other organisms that exhibit common group characteristics, morphologically alike, but susceptible of division into many subvarieties which are chiefly distinguished by their cultural reactions and especially by their elective affinity for certain tissues. No one who has seen much of osteomyelitis can fail to have been struck by the fact that when metastases occur they always take place in the bones and in young children, preferably in the epiphyses. When the pyemic stage is established, the septic infarcts, as a rule, do not localize as in other staphylococcus infections in the lungs, kidneys, brain, heart, liver, spleen, and other organs, but almost invariably in some part of the skeleton, always in bone tissue or in epiphyseal cartilage. In this respect the staphylococcus displays the specific variations and elective affinities which have been so well studied in the streptococcus and pneumococcus by Rosenau to whom we are chiefly indebted for the concept of bacterial organotropism as a fundamental generalization of great clinical as well as pathological importance. The tropism of the stapylococcus for bone analogous to the elective affinity of the tetanus toxin for the motor ganglion cells of the cord, of the diphtheria bacillus for the faucial tonsils, of the meningococcus for the meninges, of the pneumococcus for the lungs, of the typhoid bacillus for the lymph nodes of the intestines, of the virus of rabies for the central nervous system, of the organism of polyomyelitis for the anterior horns of the spinal cord, of the malarial plasmodia for the red corpuscles of the blood, and of certain strains of the treponema of syphillis for the cerebro-spinal axis.

These and other numerous illustrations that could be quoted to show that the elective affinity and specificity of the bacteria for certain tissues, are also analagous to the tropism displayed by various chemicals, dyes and drugs for different tissues so well exhibited in staining histological sections, in the affinity of arsenic for the adrenals, etc., of certain dyes and drugs for certain organisms, as quinine for malarial plasmodia, mercury and arsenic for the treponema of syphilis and for other spirochitoses and spirilloses.

That the elective affinity of the staphylococcus for bone as its special pasture, is due to a specific strain acquired in its primary cultural nidus in the bone tissue, is in conformity with clinical experience and is amply supported by the experimental facts that Rosenau so fully demonstrated in his splendid research on the "Selective localizations of the streptococcus," published in 1915. His experiments demonstrated that 68 per cent of 68 rabits injected intravenously from streptococcal cultures obtained from infected appendices, developed appendicitis in these animals and that only 5 per cent of lesions in the appendix were caused by streptococcus from other sources. Twelve strains from cholecystitis produced lesions in the gall bladder in 80 per cent of 41 animals injected, in contrast with 11 per cent caused by other strains; 18 strains from ulcers of the stomach or duodenum produced hemorrhages from the stomach or duodenum in 60 per cent of the injected animals. Forssner's experiments also show that streptococci grown in kidney and kidney extracts display especial affinity for the kidney when injected intravenously.

The practical application of these researches to the treatment of acute infectious osteomyelitis by elucidating its pathogeny is far-reaching; they suggest a great field for study in the serotherapy of this disease in the form of specific antitoxins; they also account for the failure of the stock polymorphous and polyvalent vaccines that have been applied so unsuccessfully (at least in my experience) in the treatment of this disease and especially in its pyemic phase. I am sorry to say that both the autogenous and stock vaccines in a number of typical cases, have utterly failed in my hands. I have more hope in the future of specific antitoxins.

The chief outcome of this discussion is that the progmosis of acute infectious osteomyelitis has been enormously improved in recent years by the great progress accomplished in the surgical treatment of its earliest stages when success will always depend upon the timeliness of the diagnosis (which is still a fruitful subject for discussion) but the greatest accomplishments in the control of this disease, in its most destructive metastatic form are still reserved for future research.

Dr. E. D. Martin: Dr. Cohn deserves great credit for bringing this subject before the society. Though a very common disease it is one which seems most difficult of early recognition. We have to-day five cases in our ward at Charity Hospital, in young negro girls.

Its onset, though sudden and often violent, is too frequently mistaken for other conditions. It is ushered in, usually, with a chill, high temperature, and acute localized pain, often following a history of trauma, which favors such infections. Futhermore, it is essentially a disease of childhood, appearing most frequently between the ages of 12 and 17 years.

Early diagnosis is important for two reasons: first, to save the patient a long siege of suffering, second to prevent the extensive destruction of bone. Dr. Cohn has stressed the importance of operating as soon as the diagnosis is made, and well he has. I know of no more rapidly fulminating disease that we have to deal with. The diagnosis must be made on the history of the case. X-ray is of no value in the early stages, though some authorities believe that a diagnosis may be made by a comparison with the shadows of the opposite limb.

I wish also to stress the suggestion made by Dr. Cohn in the method of operating on these cases. There was a time when we did most extensive and unnecessary operations on these patients, resulting too often in metastasis and even death, by opening up the Haversian canals and creating new avenues of infection. Conservation should be exercised in all cases. Drainage and wet dressing is all that is necessary in the early treatment of the disease.

Three years ago I was called in to see a boy 8 years of age, in an attack of pneumonia. A few days before his illness he struck his leg against some obstruction and at the time I was called he had a slight swelling above the ankle with some discoloration but little pain. I believe the gravity of his condition masked the local symptoms. I saw him two days later and there could be no doubt as to the diagnosis. We were facing a serious problem. He was moved to an institution, nitrous-oxide gas, suffcient to quiet him, was administered and an incision made over the crest of the tibia through the periosteum, exposing the bone. With an antrum trephine two small openings were made into the medullary canal and wet dressings applied. Ten days later the same operation was performed, higher up, and by this manner the boy was carried over. After several operations, lasting through a long convalescence the boy recovered.

Too many of these cases have been treated for other diseases, the true story being told only when the limb had to be sacrificed or its functions destroyed. Dr. Cohn's paper is most timely and most important.

In conclusion, the three most important points are: early differential diagnosis, immediate operation, and conservative treatment.

Dr. A. C. King: Osteomyelitis has always been an interesting subject to me on account of our seeming lack of ability to diagnose the conditions early. There is no doubt as to its being a blood borne disease; as witnesses to this, many cases can be traced to infections in other parts of the body—carbuncles, boils, abscesses and local infections due to bruises, etc.

We diagnose felons early, why? Because we keep in mind a little anatomy and a little pathology. We know that in the finger ends the lymphatics run straight down to and beneath the periosteum, therefore infection is carried between the periosteum and bone. Pus collects there, pain is intense and instead of waiting for fluctuation we incise early and deep, splitting the periosteum freely. Cases so treated within 48 or 72 hours are usually well within a week or ten days. We should recognize osteomyelitis equally as early if we expect quick and satisfactory results.

The disability and loss of time in this condition is distressing on account of the chronicity. Our hospital cases, as a rule, are chronic neglected cases and remain with us for months and months at a time. As Murphy states in regard to suppurative appendicitis, "When pus formation occurs it is an evidence that that case has been neglected by someone." So, in osteomyelitis, where we find a fluctuating mass along a long bone we know that the products of infection have broken through and gone on to pus formation and bone destruction simply because that case has been neglected by someone.

Dr. Cohn (Closing): I wish to thank the members of the society for their liberal discussions. There is very little to add to Doctor Matas' complete discussion of the subject. I wish only to emphasize again the importance of early diagnosis and early operation; not waiting for the X-ray to confirm the diagnosis.

DIFFUSE GONOCOCCAL PERITONITIS REPORT OF A CASE.*

By DR. E. A. FICKLEN, New Orleans.

The first case of general peritonitis caused by the gonococcus in pure culture was reported by Dr. Harvey Cushing in May, 1899. The latest case was reported by Dr. Maurice Gelpi at the last meeting of the Louisiana State Medical Society.

In reviewing various articles on diffuse peritonitis, it is found that the gonococcus is seldom mentioned as an etiological factor. Localized pelvic peritonitis is a frequent complication of gonorrhea in the female and such cases excite no attention. The disease commonly spreads to the cervix and from there to the tubes with little disturbance to the endometrium. The mucous lining of the tubes become swollen, the fimbriæ retract, and when the acute stage has passed, the abdominal ostium is usually closed, either by contraction or by adhesion to neighboring viscera. This sealing of the tube is a natural protective barrier, and is ordinarily re-enforced by intestinal and omental adhesions which isolate the pelvis. It must be noted that contrary to the usual belief the ostium does not close at once during the acute stage. Sir John Bland Sutton stated that the tubes are open at first and pus can be seen leaking from them. The gonococcus may reach the peritoneum through the patulous tube, through the blood stream in bacteremia, or rarely through lymphatic channels. Peritonitis is one of the rare complications of gonorrheal vulvo-vaginitis in children, and has a high mortality. This phase of the subject is thoroughly covered by Norris in "Gonorrhea in Women."

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*Read before the Orleans Parish Medical Society, October 24th, 1921.

In discussing Dr. Gelpi's case, I stated that only about thirty cases of gonococcal peritonitis had been reported, but I have since found that in 1907, Goodman collected seventy-five cases, thirty of which were confirmed by bacteriological examination. I wish to make a differentiation between the case here reported and the much more usual cases of general peritonitis following rupture of the inflamed uterine adnexæ. Norris reports 99 cases of the latter type and notes that in the majority the ruptures were caused by violence, transportation, bimanual examination, coitus, pregnancy and labor. A violent febrile reaction with great pain and marked rigidity usually means a mixed infection with streptococci or colon bacilli. It has long been known that a pyosalpinx becomes sterile after a period of several months as the gonococci destroy themselves by their own toxins or are destroyed by the immune bodies of the host. Rupture, however, may take place before sterilization is complete, and the bacterial flora in cases of general peritonitis has comprised staphylococci streptococci, colon bacilli, as well as gonococci.

Brose, Cushing and others have stressed the peculiar dry fibrinous character of the peritonitis produced by the gonococcus. In my case there was abundant reddish fluid with widespread deposits of fibrin.

To summarize: diffuse peritonitis due to gonococcal infection is rare; it is more common in children than in adults; the disease is far more severe in childhood, causing temperature ranging to 104 degrees or above, whereas in adult life the temperature does not rise above 100.5. The mortality of this type is low—about 20 per cent. In Cushing's two cases peritonitis followed menstruation. The symptoms in some patients treated expectantly subsided in a few days, and the convalescence was not prolonged, but it must be emphasized that these were mild types. Surgical treatment gives a lower mortality.

The diagnosis can never be made positively until the laboratory has reported, therefore of Goldman's cases we are certain of thirty only. In the remaining forty-five, a peritonitis developed coincidentally with a genital gonorrheal infection, but absolute proof of specific origin is lacking.

Case Report: Mrs. J. M., referred by Dr. Verdier, aged 44, married, white, six para, Malaria 8 or 10 years ago. "Dyspepsia" for many years. Leucorrhea since adolescence. Had suffered for two days with violent cramps in the lower abdomen. Constipated. Persistent nausea.

Physical examination—Tall, thin, anemic, expression anxious. Heart and lungs negative. Temperature 98. Pulse 120. Abdomen moderately distended. Pressure over right lower quadrant produced agonizing pain. Right rectus rigid. Vaginal examination showed a profuse white discharge. Tubes and ovaries not palpated as examination was extremely painful. The white cell count was 18,500 with 92 per cent neutrophiles. The patient was moved to the Presbyterian Hospital at once, and after a hypodermic of morphine and atropine, was taken to the operating room. I suspected a gangrenous appendix.

The abdomen was opened in the mid-line below the umbilicus. A reddish brown purulent exudate, with many flakes of fibrin, poured out as soon as the peritoneal cavity was opened. The appendix was exposed, but it showed no more signs of inflammation than did the surrounding intestines. The uterus and tubes were brought into view by traction on the round ligaments and the peritoneal covering alone found involved. The fimbriae of the tubes were free and the tubes themselves were neither enlarged nor tortuous. I then turned to the upper abdomen, believing that the lesions must be either in the stomach, duodenum or gall bladder. A mid-line incision was made above the umbilicus. Exploration showed an intensely congested peritoneum with some fluid, but no perforation. It was noted that the involvement of the pelvis was far more marked than that of the upper abdomen. Drainage tubes were inserted to the cul de sac and the patient sent to the ward.

The explanation of the condition was not apparent until a few days later, when specimens of the pus from the drainage tube were sent by Dr. Verdier to Dr. Harris and to Dr. Adams. Both reported finding gonococci in pure culture. Ten days after the operation, the cultures and smears made from the abdominal wound were reported negative, but gonococci were still present in the vaginal discharge. On Nov. 27, 1919, six days after the first operation, the leucocyte count rose to 32,000 with 90 per cent neutrophiles. The patient began to complain of pain around the rectum, and the temperature which had remained below 99 rose to 100.8. On Dec. 1, the temperature was 101, the pain greater and examination revealed a large fluctuating mass to the left and behind the uterus. A pelvic abscess, containing several ounces of pus, was drained through the vagina the next day. Following this the patient improved a great deal, but her convalescence was by no means uneventful. On five or six occasions it was necessary to reopen the abscess cavity with dressing forceps. Whenever the drainage was not free, the temperature rose and the patient lost ground.

This case was finally discharged, cured, six weeks after the first operation. During this period, she was given a mixed stock gonorrheal vaccine by Dr. Verdier, who reported to me that her husband, a man of 56 also had an active gonococcal infection. The patient denied intercourse for a period of two years prior to illnes, so it is difficult to establish the duration of the infection.

In conclusion, I wish to thank Dr. Verdier for allowing me to use his notes in the preparation of this report.

SPECIFIC TREATMENT OF MALARIA.*

By C. C. BASS, M. D., School of Medicine, Tulane University, New Orleans

Introduction. Malaria is one of the very few diseases for which we possess a specific cure. The only specific remedy for malaria is quinine and, to a limited extent, certain other cinchona alkaloids. Therefore, specific treatment of malaria consists of treatment with quinine. Although other measures and perhaps certain other drugs may favorably influence the course of malaria to some extent, they are of negligible value as compared with quinine. In the present paper only the specific treatment with quinine will be discussed.

Action of Quinine in Malaria. Quinine acts in malaria by killing the malaria parasites in the circulating blood of the patient. Just how this is done is not definitely known, but perhaps the most prevalent belief is that the parasites are killed by some specific toxic effect of the drug on the parasites. If one studies the blood of suitable malaria patients following the beginning of quinine treatment, certain changes can be observed to take place in the parasites as soon as the quinine reaches the blood in sufficient concentration. These changes are noted chiefly or entirely in the asexual parasites, or schizonts, which are the parasites that produce the clinical symptoms, and not in gametes. The ameboid activity of the parasites is rapidly reduced and the pigment granules, which are normally very actively dancing within the cytoplasm of the parasite, first move much more slowly and later cease their motion entirely. In stained specimens it may be noted that the younger parasites, especially, stain more intensely.

Those parasites that are old enough to be irregular in outline seem to become more irregular and their cytoplasm becomes more filamentous, at first, but soon they retract into a round or oval mass. Ameboid activity appears to have ceased and the parasite is now probably dead. By this time the number of parasites begins to diminish, more rapidly in tertian and quartan infections than in estivo-autumnal. If the concentration of quinine in the blood is sufficient, most if not all the tertian or quartan asexual parasites disappear within twenty-four hours. Estivo-autumnal parasites may not disappear so rapidly. It is not uncommon to find an occasional parasite even after the patient has been taking quinine for two, three or four days. The number, however, rapidly diminishes from the first. Some of these appear normal. There is good reason to believe and, in fact, we know that the parasites that appear in the circulating blood later, come out from locations in the organs and tissues of the body where they had not been reached by the quinine in the circulating blood to sufficient extent to destroy them. This alteration in the appearance, activity, staining qualities and final disappearance of the parasites following quinine results only when there is sufficient quinine in the blood stream to produce this effect.

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Co-incidentally with the destruction and disappearance of the parasites, the active clinical symptoms, fever or chills and fever, stop. The effect upon the parasites and upon the clinical symptoms is dependent upon the amount of quinine taken. The dose of quinine and method of administration are therefore of the utmost importance. One of the chief objects of this paper is to emphasize, if I can, the proper dose and method of administration of quinine in the treatment of malaria.

The treatment of malaria may be conveniently divided into two parts according to the object in view. The first part is for the purpose of relieving the clinical symptoms and the second part for the purpose of entirely destroying the infection in the patient to prevent subsequent relapse and to prevent his being a source of infection to others. The patient may still have some parasites (sometimes too few for us to find them) long after the clinical symptoms have been relieved by destroying most of his parasites. They may multiply after treatment is stopped and give rise to relapse. It is not uncommon for patients to relapse from time to time over a period of months and sometimes several years, much to the discredit of the physician who treats them. This is possible only when not all of the parasites were destroyed. If every one was destroyed relapse could not occur and the patient would no longer be a possible source of infection to others.

There is the greatest variation in the methods of treatment advocated by different authorities on malaria. Hardly any two of them recommend the same method and what is more unfortunate, many of the methods recommended are impractical, un-reasonable, not effective, unnecessarily harmful to the patient or unnecessarily difficult to carry out, all of which tends to defeat the purpose.

Amount of Quinine Necessary to Relieve Clinical Symptoms.—Quinine in large doses causes more or less discomfort in most people. In sufficiently large doses it may be very harmful and actually destructive of life. It is therefore desirable that the amount of quinine given for the relief of clinical symptoms should be the minimum that will accomplish the desired result. There is no good excuse for giving any more than this amount if we know what it is.

The clinical symptoms are stopped and the parasites in the blood are destroyed by smaller amounts of quinine in some individuals than in others. It occurs in some cases that as little as ten grains daily would have this effect, in others fifteen, twenty, twenty-five and sometimes thirty grains daily are required to produced the same effect. There is no way by which we can determine whether a given individual will be relieved by the smaller or will require the larger amount. Therefore, the only certain way to accomplish the desired result is to give the larger amount in all cases. If we could select those who would require only smaller amounts there might be some excuse for trying to individualize and treat each patient differently. Since we cannot, all cases of malaria should be given the same amount of quinine, 30 grains daily for adults and a proportionate amount for children, for the purpose of relieving the clinical symptoms. This is about the smallest amount that can be depended upon to give the desired result. At the same time, it is not larger than almost any person can take without unbearable discomfort or harmful effect.

Thirty grains of quinine daily causes the disappearance of the clinical symptoms, fever or chills and fever, practically always within three or four days. I am fully aware of the fact that many physicians think they have seen cases that continued to have fever or chills and fever due to malaria for much longer periods of time in spite of even much larger amounts of quinine. Practically all such cases are errors in diagnosis. I am not prepared to say that such cases may not sometimes occur, but I do say that they are so rare that I have not been able to see even one such case. I have been watching the effect of this particular amount of quinine in malaria for the past six years and formulate circumstances have permitted me to see and to know of a great many cases of malaria who took this amount. I have not been able to see or know of a single instance where fever or chills and fever due to malaria did not stop within three days.

During the past summer one of our present Senior students, Mr. G. E. Whitaker, has endeavored to keep in touch with the malaria cases treated in several of the large hospitals of New Orleans, with instructions to note the amount of quinine taken and the duration of the fever or chills and fever. Any case in which the amount of quinine taken daily was 30 grains or more and in which fever lasted three days on this treatment, was to be reported to me at once for investigation. It was hoped that if cases do occur in which 30 grains of quinine daily fail to stop the clinical symptoms, I might be able to see them. More than fifty cases have been recorded and four. in which it appears that quinine had failed, were reported for investigation. One proved to be typhoid, confirmed by blood culture; in two cases the quinine had been recorded but had not been given and in the other the diagnosis could not be confirmed and there is good reason to believe it was not malaria at all. This experience would seem to indicate that 30 grains of quinine daily does not fail to stop the clinical symptoms in practically all cases of malaria treated in the hospitals in New Orleans. If there are exceptions, they are very rare, so rare that I have been unable to get to see them.

Mode of Administration.—Quinine may be administered intravenously, intramuscularly or orally. It reaches the blood stream more quickly when given intravenously and this method of administering the initial dose is to be preferred where there is great urgency and where there is good reason to believe the security of the life of the patient depends upon getting quinine into the blood stream at once.

This method of administering quinine, however, is a formidable procedure accompanied by a certain amount of risk and therefore should never be resorted to except under the extremely rare, exceptional, circumstances mentioned. I cannot believe that intravenous administration is justified under any other circumstances. Whenever given in this way the dose should be small, never more than 10 grains of the bi-hydrochloride, and it should not be continued after quinine can be administered orally.

There is practically no place for hypodermic or intramuscular administration of quinine in malaria. It causes more or less damage to the tissue, sometimes producing abscesses. It is absorbed with less uniformity and less certainty, and sometimes acts more slowly than when administered orally.

Oral administration of quinine is convenient, practical, as effective as any other method and, in fact, it is the only method that can be followed in the treatment of ordinary cases of malaria if one gives due consideration to the interest and welfare of his patient.

Quinine administered orally is absorbed slowly and eliminated slowly. In a recent report of extensive investigation into the absorption and excretion of quinine in the urine, Nierenstein (1) found that it is ''possible to detect quinine qualitatively in the urine (1) in a few minutes after oral administration and (2) seventy hours after administration had ceased.'' A single dose daily would therefore result in a fairly uniform concentration of quinine in the blood. So far as its effect upon the malaria is concerned it is immaterial whether the 30 grain daily amount is all given in one dose or in several divided doses. Large doses of quinine produce more gastric disturbance and other discomfort to the patient than smaller divided doses. Ten grains three times daily is a convenient and very practical method of giving the required 30 grain daily amount .

Quinine Passes Out of the Stomach Rapidly—It is of interest to note that quinine administered orally passes on out of the stomach rather rapidly. Nierenstein (1) found only traces of quinine ''in the vomits of four cases soon after oral administration of large doses of quinine.'' This would seem to minimize the importance of another one of the excuses frequently given for not administering quinine orally.

Choice of Salt of Quinine.—With regard to the choice of salts of quinine, there is no conclusive evidence that one of the commonly employed salts is more effective than another. The recent extensive research referred to above practically confirmed previous observation and conclusions. "It was found that there was no marked difference in the excretion of the bi-hydrochloride, hydrochloride, hydrobromide, bi-hydrobromide, sulphate and the free alkaloid given orally." No salt of quinine is more effective in destroying parasites and stopping clinical symptoms than the sulphate. Since this is the salt in most common use and for the sake of uniformity, it is the one to be recommended. There is nothing to be gained by one of us teaching, advocating and practicing the use of one salt and one another if they are all equally effective. Such teaching and practice tends to confusion and also mysticism which certainly should be avoided with regard to malaria.

Treatment to Cure the Infection.—After the clinical symptoms have been relieved by 10 grains quinine sulphate three times daily for a period of three or four days, treatment for the purpose of curing the infection should begin. We may not be able to find malaria parasites in the blood at this time, but if no more quinine is taken the patient will usually relapse in from a few days to a few weeks or months, showing that he was still infected though the clinical symptoms had stopped and no parasites could be found in the blood. There are some parasites localized in certain organs and tissues, chiefly perhaps in the bone marrow and spleen. In due course of time they reproduce and come out into the circulating blood.

Quinine kills only the parasites in the circulating blood at the time and does not kill those lodged in the tissues. The most certain way to destroy the infection is to keep a sufficient amount of quinine in the blood stream at all times to kill any parasites that appear in the blood. If this is kept up long enough all the parasites in the body of the individual are destroyed and the infection is cured.

Amount of Quinine Necessary to Kill Parasites as they Appear.—If we give 5 grains quinine daily to a number of persons who are infected with malaria but who have no clinical symptoms at present, most of them remain free from clinical symptoms while taking it and some finally lose their infection. A considerable proportion, however, sooner or later develop clinical symptoms in spite of the quinine and parasites become numerous and demonstrable in their blood. This shows that 5 grains daily is not sufficient to destroy the parasites and cure the infection in all cases.

If, on the other hand, we give to a similar group of malaria infected persons 10 grains quinine daily, practically none develop clinical symptoms or numbers of parasites in their blood while taking it. Once in a great while a person may develop symptoms and parasites may multiply in his blood while taking this amount. Though the number of such instances is negligible, at the same time it shows that 10 grains daily is about the minimum amount that can be depended upon to kill the parasites as they appear in the blood and to finally destroy the infection. Of course, any larger amount would produce the same result, but it is desirable to give the minimum amount that will have the desired effect, from the standpoint of economy and especially out of consideration of the patients' comfort. Unnecessarily large amounts of quinine produce more or less discomfort and have no better effect. The discomfort often causes the patient to quit the treatment before his infection is destroyed and therefore defeats the purpose. Ten grains daily is therefore, about the proper amount (not too small to produce the desired effect, not large enough to produce unnecessary discomfort) to destroy the infection. This amount can be taken in one dose satisfactorily and at night before retiring is probably the most convenient and practical time in most instances.

Duration of Treatment Necessary to Cure the Infection.—If we should give 10 grains quinine daily to a group of malaria-infected persons for only one week and stop, a small proportion would be disinfected by even this short treatment, but most of them would relapse sooner or later. If the treatment is continued for two weeks a larger per cent. would be disinfected. If it is continued for four weeks, 60 to 70 per cent. are disinfected. If it is continued for eight weeks, between 90 and 95 per cent. are disinfected. It would probably take more than three months' treatment to disinfect 100 per cent.

It is very apparent that a much longer period of treatment is required to disinfect certain individuals than others. Unfortunately, we have no way by which we can determine in advance which cases will be disinfected in short time and which will require treatment for a much longer time. Neither can we examine a patient during the course of treatment and determine that he has been cured. The absence of parasites from his blood or other symptoms have no significance in this regard. Since we have no guide as to the duration of treatment a given patient will require and no guide as to when he is disinfected, we must treat all cases alike. We cannot and should not individualize. Quinine should be given in every case for a period which is known to disinfect a satisfactorily high per cent. of cases.

Since treatment for a comparatively short period disinfects a considerable per cent. of cases and since a very long period, more than three months, is required to disinfect 100 per cent., it seems permissible and advisable to select a period which falls slightly short of perfect results in all cases but does disinfect almost all cases. Eight weeks does this and this period has been adopted and is now taught and practiced by the majority of the leading students and workers in malaria in this country.

The Standard Treatment for Malaria. The treatment described above, "For the acute attack, 10 grains of quinine sulphate by mouth three times a day for a period of at least three or four days, to be followed by 10 grains every night before retiring for a period of eight weeks," was adopted two years ago by the National Malaria Committee (2) and recommended as the standard treatment for malaria. Since that time it has been endorsed and approved by the United States Public Health Service, it has been published and recommended as an official method of treatment in Military Medical Review, published in the office of the Surgeon General, it is taught in the Army Medical School and several other medical schools, it has been adopted as the approved method of treatment in many of the hospitals of this country, it is being employed in much of the malaria control work of different health agencies, and it is being followed with much satisfaction by a rapidly increasing proportion of the physicians of this country and some foreign countries. I wish to recommend to those present serious consideration of adoption of the standard treatment as a routine method of treatment of malaria.

REFERENCES.

(1) Nierenstein, M. Report on the Excretion of Quinine in the Urine (Wa Office Investigations) in Observations on Malaria by Medical Officers of th Army and Others. His Majesty's Stationery Office, London.

(2) U. S. Public Health Reports, Vol. 34, No. 52, December 26, 1919, p. 2,959.

NECROSIS OF SKULL WITH RESULTING MENINGOCELE; REPAIR BY TIBIAL TRANSPLANT.

By J. T. NIX M. D. and J. M. PERRET, M. D.
(From the J. T. Nix Clinic, New Orleans).

Among the interesting cases we have lately seen at the clinic is the one which furnishes the subject-matter of this report. It was one showing complete destruction of a part of the right parietal bone near its eminence. The diameter of this loss of bony substances was about one inch and the dura mater herniated through the opening.

Syphilis can produce such a condition and as the Wassermann reaction was positive, it is probable that it was the etiological factor. It is not so often that we see this syphilitic manifestation. The trouble probably began as a periostitis and later the outer table became involved and finally the inner one We are led to this supposition as there was more destruction of the outer than of the inner table. If the pathological process had started from a lesion within the skull we would have expected more destruction of the inner than of the outer table, on account of intra-cranial pressure.

Between the time the patient was first seen at the Clinic on December 28, 1920 and her operation on April 21, 1921, she had been placed on vigorous and anti-syphilitic treatment, receiving four injections of salvarsan and mixed treatment internally. This by itself was not enough to relieve her and surgery had to be resorted to. The object of the surgical intervention was to relieve pressure on the brain which on account of the intra-cranial pressure was being herniated through the skull and also to protect the brain from injury by filling the gap in the bone. The history of the case follows:

Mrs. H. H. K., white female, 43 years, native of Louisiana was seen at the Clinic on December 28, 1920, and complained of a "thumping sensation in right side of head."

Present Illness.—This began six years ago with a thumping sention over an area about the size of an adult's thumb-nail and located over right upper part of head. This thumping was constant, but there were periods in which it was more severe. It was always aggravated by lying down and also by sneezing. Sometimes she felt so badly that she had to remain in bed. It was seldom that she could get more than half a night's sleep. At no time did she complain of headache, dizziness or vomiting. The first physician that she consulted prescribed some pills and capsules. These gave her temporary relief for a short while when she was taking them. Soon, however, they failed to relieve her. She then on her own initiative began to take Aspirin in ten grain doses and felt some relief.

About a year after the onset of her present illness, she noticed a soft spot about the size of the tip of the index finger which she describes as feeling like a baby's fontanelle. At this time she went to one of our local hospitals and came under the care of a neurologist who for eight months gave her some internal medication and applied the electric battery. There was no improvement. The thumping continued. Six months later she went to another of our local hospitals. There she seems to have been well studied from a diagnostic point of view. She was given some drops to take, but after a few doses her eyes became sore and she was told to discontinue them. She remained under observation for ten months and her condition was stationary. In the meanwhile she was depending on Aspirin for relief. Eight months after her second hospital experience she consulted a physician who treated her for a month with green pills. No benefit therefrom. After this she returned to the first physician whom she had consulted and saw him at various times. He advised her that his medicine was only giving her temporary relief and that he could not cure her. After this she came to the Clinic.

Past History. Measles, pertussis and yellow fever in childhood. Malaria at age of thirteen years and for three summers thereafter. Mild case of influenza in 1919. Menses began at thirteen years, last five to six days, twenty-eight day type, painless.

Marital History. Married twenty-three years. Mother of six children. Four are living and well. One child died in infancy of infantile paralysis. One child was still-born. No miscarriages. No previous operation.

Family History. Father, mother, two brothers and three sisters enjoy good health. One brother died in infancy of "consumption of the bowels." One sister was still-born. No cancer or pulmonary tuberculosis in the family.

Physical examination. General appearance is good. Weight 215 pounds.

Blood-pressure. Systolic 182, diastolic 120.

Head. On right side of skull, occupying the posterior and upper lateral aspect of the parietal bone, is a loss of bony substance, about the size of a ten cent piece. The edges of the parietal bone are well felt and give one the impression of an old trephine hole in the bone. Through the opening in the bone can be felt a soft and very tender mass.

Eyes. Pupils are equal and react to light and accommodation. Knee jerks are negative. Tongue is negative.

Teeth. Only a few are left and these are in bad condition.

Chest. Lungs are negative. There is an accentuation of the second aortic sound.

Abdomen. Umbilical hernia, the ring of which is about 2 inches in diameter.

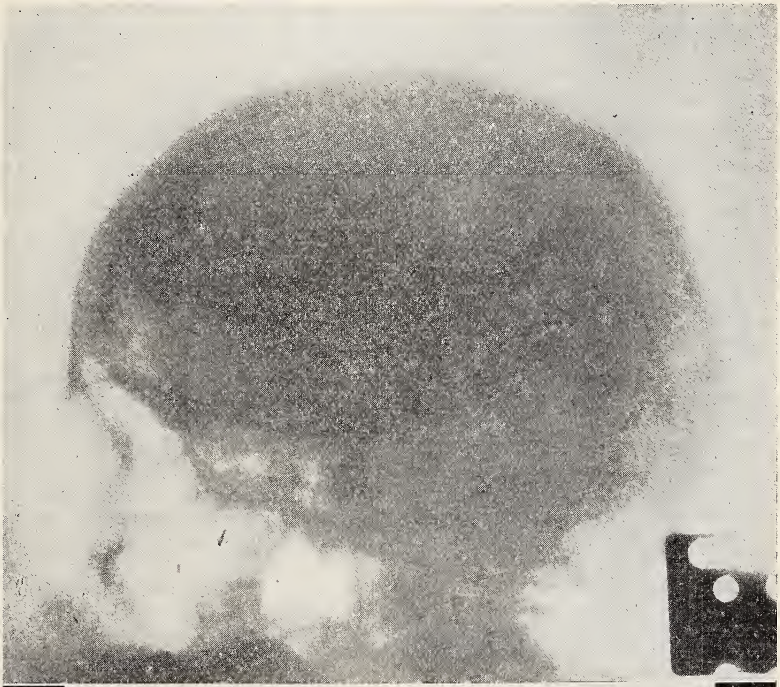
Laboratory Examination. Laboratory examination and X-ray by Dr. E. Escalante.

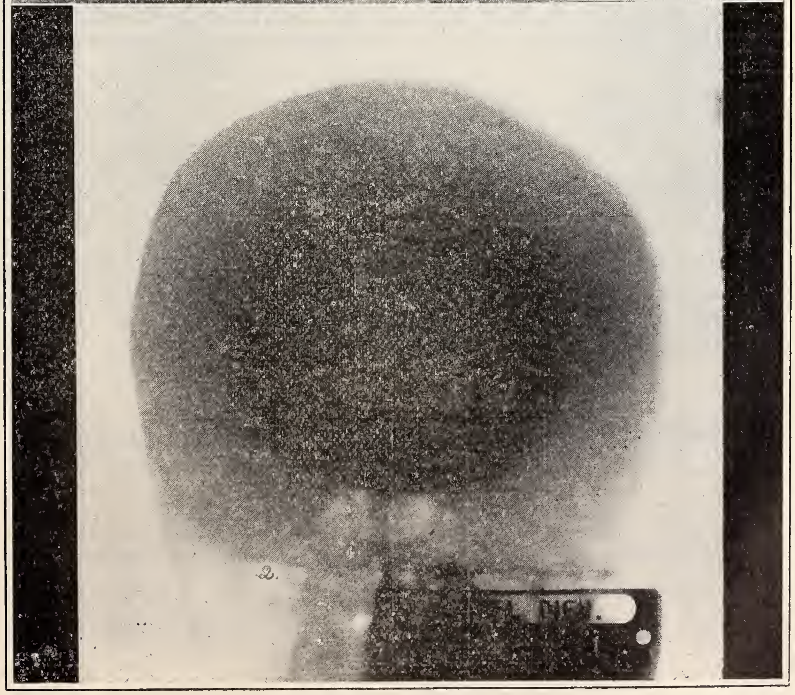
Urinalysis. Traces of sugar. No albumin or indican.

Total white count: 8500 per c. mm. Differential; small lymphocytes, 23; large lymphocytes, 2; eosinophiles, 2; neutrophiles, 73. Wassermann: 2 plus.

X-ray examination shows complete loss of both tables of part of right parietal bone, over an area about 3 cm. in diameter.

Fluoroscopy of Chest. Heart and aorta negative. Lungs negative. Hilus glands enlarged. Diaphragm negative.





1. Lateral view showing the extent of bone destruction and the bone grafts in position.
2. Antero-posterior view.

ARTICLE OF DRS. NIX AND PERRET.

December 28, 1920. Ear, nose and throat examination by Dr. V. Fuchs. Nothing of any significance found.

April 21, 1921. Operation at Hotel Dieu by Dr. J. T. Nix. Ether anesthesia. Time of operation; one hour. Pulse 110 at beginning and 90 at end of operation. Horse-shoe incision of scalp to bone. When flap was dissected down, a tense bulging mass about the size of a large marble and covered by a thick, shiny, gray membrane was exposed. There was a complete destruction of both tables of the skull over an area about 1 inch. The dura was excised close to the edge of the bone, cerebro-spinal fluid was released and the mass disappeared. There was more destruction of the outer than of the inner table. With rongeur forceps the edges of the bone were evened off, very little of the bone was cut away. Two pieces of the right tibia 3 cm. by 1 cm. were taken and transplanted parallel to each other in order to bridge over the gap in the skull. Wound closed with silk worm gut sutures.

April 21, 1921. The following report was received from the dura mater specimen removed at operation: tissue received has structure of meninges. Shows no inflammation, glial or ganglion cells. Not a gumma or a neoplasm, but possibly a meningocele.

April 30, 1921, Wassermann negative; Tschernogubow negative. Total white count 10,500 per c. mm., Differential: small mononuclears, 23; large mononuclears, 2; eosinophiles, 2; neutrophiles, 73.

May 2, 1921.—X-ray of skull by Drs. Fortier and Gately. There is seen a large area of complete bone destruction in right parietal bone about 4 cm. by 3 cm. Lying in the bone cavity are two line transplants 1 cm. by 3 cm. placed at a slight angle with the vertical axis of the bone. The upper extremity of the anterior transplant projects above the edge of the bone cavity to a slight degree. This X-ray report together with the radiogram gives a very good idea of the pathology found. It must be borne in mind that hardly any bone was removed at time of operation, the edges only being evened off.

Progress Notes. April 21, 1921, Reacted well. Spoke on evening of operation and did not complain.

April 23, 1921. Felt slightly dizzy to-day for a short while.

May 2, 1921. Discharged. She has felt very well and has no complications so far. She has sneezed several times without discomfort.

May 6, 1921. Sutures removed. The wounds have healed by first intention. The patient's condition continues to improve. No thumping. Complete relief. She has not received medication since operation. May 21, 1921. Improvement continues.

September 29, 1921. Continues well.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By P. T. TALBOT, M. D., Secretary-Treasurer.

The following is submitted for the information of the Chairman and personnel of each committee of the Louisiana State Medical Society, in order that they may have ample time in which to accomplish something in their respective field, before the annual meeting of the Society, April 11, 12 and 13, 1922:

STANDING COMMITTEES.

Committee on Scientific Work, Dr. P. T. Talbot, Chairman; Dr. A. Henriques, New Orleans; Dr. S. M. Blackshear, New Orleans, La.

Committee on Public Policy and Legislation, Dr. H. E. Bernadas, Chairman, New Orleans; Dr. Homer Dupuy, New Orleans; Dr. W. H. Block, New Orleans; Dr. J. E. Knighton, Shreveport; Dr. P. T. Talbot, New Orleans.

Committee on Publication, Dr. P. T. Talbot, Chairman, New Orleans; Dr. Amédée Granger, New Orleans; Dr. C. J. Gremillion, Alexandria.

Committee on Budget and Finance, Dr. J. J Wymer, Chairman, New Orleans, La.; Dr. M. J. Lyons, New Orleans; Dr. J. O. Weilbaecher, New Orleans; Dr. J. M. Koelle, New Orleans; Dr. C. G. Cole, New Orleans.

Committee on Medical Education, Dr. L. R. DeBuys, Chairman, New Orleans; Dr. B. W. Smith, Franklin; Dr. C. W. Allen, New Orleans.

Committee on Medical Defense, Dr. Allan Eustis, Chairman, New Orleans; Dr. R. O. Simmons, Alexandria; Dr. J. C. Willis, Shreveport.

SPECIAL COMMITTEES.

Committee on Health and Public Instruction, Dr. P. H. Fleming, Chairman, St. Martinville; Dr. E. L. Leckert, New Orleans; Dr. T. A. Roy, Mansura; Dr. R. O. Simmons, Alexandria.

Committee on Cancer Control, Dr. W. H. Harris, Chairman, New Orleans; Dr. J. C. Willis, Shreveport; Dr. A. Henriques, New Orleans.

Committee on Hospitals, Dr. I. I. Lemann, Chairman, New Orleans; Dr. J. W. Newman, New Orleans; Dr. J. A. Lanford, New Orleans; Dr. L. J. Menville, New Orleans; Dr. D. I. Hirsch, Monroe.

Committee on Industrial and Economic Relations to Medicine, Dr. H. W. Kostmayer, Chairman, New Orleans; Dr. A. E. Fossier, New Orleans; Dr. Wm. H. Block, New Orleans; Dr. Geo. Roeling, New Orleans.

Committee on Health Problems in Education, Dr. A. A. Herold, Chairman, Shreveport; Dr. G. C. Antony, Alexandria, La.; Dr. A. L. Whitmire, New Orleans; Dr. H. P. St. Martin, Houma; Dr. S. L. White, Ruston.

The Society will expect a report from the Chairman of each Committee, on their respective workings and accomplishments during the year, to be read at the annual meeting in Alexandria.

The following list of Chairmen, Scientific Sections, Annual Meeting of the State Society, 1922, is published again for the information of the membership:

Section on Medicine & Therapeutics, Dr. Hamilton P. Jones, Chairman, New Orleans.

Section on Pediatrics, Dr. John Signorelli, Chairman, New Orleans.

Section on Nervous Diseases, Dr. C. S. Holbrook, Chairman, New Orleans.

Section on Bacteriology & Pathology, Dr. G. H. Hauser, Chairman, New Orleans.

Section on Pub. Health & Sanitation, Dr. B. A. Ledbetter, Chairman, New Orleans.

Section on General Surgery, Dr. J. L. Adams, Chairman, Monroe.

Section on Gynecology & Obstetrics, Dr. J. I. Peters, Chairman, Alexandria.

Section on Eye, Ear, Nose and Throat, including Stomatology, Dr. C. A. Weis, Chairman, Baton Rouge.

Section on Urology, Dr. I. B. Rougon, Chairman, Shreveport.

Section on Dermatology, Dr. C. B. Erickson, Chairman, Shreveport.

Section on Radiology, Dr. S. C. Barrow, Chairman, Shreveport.

Dues, for the year 1922, Louisiana State Medical Society, are now being accepted in the office of the Society, No. 1551 Canal Street, New Orleans, La. If your Parish **IS** organized, send your dues in to the Secretary or Treasurer of your Parish Society. If your Parish is **NOT** organized, kindly make check payable to the Louisiana State Medical Society, in amount $4.00 and mail direct to the office of the Secretary of the State Society.

NEWS AND COMMENT.

At the recent meeting of the Southern Surgical Assoclation held in Pinehurst, N. C., Dr. C. Jeff Miller, was elected president for the year 1922. Memphis, Ttenn., was selected as the next meeting place.

The Avoyelles Parish Medical Society met at Cottonport in December and elected Dr. C. Jeansonne, president; Dr. K. A. Roy, vice-president; Dr. S. J. Couvillon, secretary-treasurer; Dr. R. G. Ducoté, delegate to the State Society in Alexandria next April.

The East Feliciana Parish Medical Society met with the Hospital staff in Jackson, La.. The name of our society was changed to Feliciana Medical Society.

The following officers were elected for 1922: Dr. A. F. Barrow,Pres; Dr. E. E. Evans, Vice-pres.; Dr. E. M Toler, Sec.-Treas.; Dr. J. W. Lea, Delegate to State Medical Meeting.

The regular meeting of the St. Tammany Medical Society was held in Covington, December 8. Following officers were elected for 1922: President, Dr. A. G. Maylie; vice-president, Dr. J. K. Griffith, Slidell; secretary-treasurer, Dr. J. F. Buquoi, Covington. The forming of a Tri-Parish Medical Society was discussed and met with approval. It was decided to invite Washington and Tangipahoa to join in its formation.

More Doctors Needed in the Phillipines. At present there are only 969 physicians in the Phillipines, or one physician for each 11,000 inhabitants. The mortality is 26 per 1000 against 13 per 1000 in other countries, while the infant mortality is nearly 300 per 1000 against 100. The mortality from typhoid is 32 per 100,000 while in New York it is 3.82 per 100,000, and death from tuberculosis is 504 per 100,000 as against 172 per 100,000 in New York. It has been figured out, therefore, that about 3,000 physicians are needed in the Phillipines, according to a speech by Dr. Jose Albert, Acting Dean of the College of Medicine and Surgery.

Increase in the Roll of the Red Cross in foreign countries is attributed to the use of methods in vogue in the American Red Cross in the distribution of badges and buttons, a surplus of which were sent to the League of Red Cross Societies for use in foreign countries. American Red Cross emblems were distributed as follows: Swiss 80,000; Swedish 13,000; Italian 500,000; Venezuelan 5,000, and to the Hungarian Juniors 25,000.

THE AMERICAN RED CROSS "CHILD HEALTH EXPEDITION" has been touring cities of devastated France. It has shown for periods of two to three weeks in six French cities, Lille, Roubaix, Tourcoing, Cambrai, Douai and Valenciennes, besides a month in Paris. The attendance has averaged about 5,000 persons daily. Every feature of the rearing of children according to the soundest and most approved methods was shown. Several French and American organizations joined with the American Red Cross in providing the various specialized departments.

DIETITIANS ARE NEEDED IN PUBLIC HEALTH SERVICE, according to a recent circular issued by the U. S. Civil Service Commission. Application blanks and full information covering the examination for such positions in the Public Health Service hospitals throughout the United States may be obtained at Washington, or from the secretary of the local board of Civil Service Examiners, at the postoffice or courthouse in any city. No written examination will be given, but applicants will be rated upon the subjects of general education and technical training and experience. The basic entrance salary offered is $960 a year with possible promotion to $1344 a year; to all salaries there is added the increase of $20 a month granted by Congress. In addition quarters and subsistence are furnished free by the government.

TYPHOID DEATH RATE DURING THE WAR. .The November bulletin of the Louisiana State Board of Health is responsible for the statement that out of the 4,000,000 U. S. troops in the World War there were only 213 deaths from typhoid! Anti-typhoid vaccine is furnished free to physicians by the Louisiana State Board of Health.

THE NATIONAL HEALTH EXPOSITION, occupying 60,000 square feet of floor space, will be held in the Jefferson County Armory at Louisville, Kentucky, from February 1 to 9, 1922, under the auspices of the U. S. Public Health Service, State Board of Health of Kentucky, Jefferson County Board of Health and the Health Department of the City of Louisville. It will include exhibits in hospitalization, nursing, dentistry, medicine and pharmacy. The University of Louisville, the public school system and various local, state and national health organizations will participate.

Strasbourg Holds Congress of French Societies. Recently there was held in Strasbourg, France, Congresses of Medicine, Surgery, Urology and Orthopedic Surgery, to honor Alsace upon the occasion of its return to France and the uniting of the ancient Faculty of Medicine of Strasbourg to the National University of France.

Illinois Birth Registration Drive Planned. Among the states that have not qualified for the United States Birth Registration Area, Illinois stands alone among the northern states east of the Mississippi and the State Department of Public Health has decided to carry out a drive to secure complete birth reports. The State of Illinois had a birth rate in 1920 of only 18.4 per 1000 against a birth rate for the United States Registration Area of 23.7 for the same year. Even if the birth rate had been the same for the State as for the Area, by using 23.7 as a basis, there actually occurred about 154,000 births in the State and leaves nearly 30,000 unrecorded births in Illinois for 1920. It is interesting to note that out of 17 cities six of them made complete reports only after the State Department of Public Health had carried out campaigns in these places.

South Carolina Has Organized a Pediatric Society in which self information in all matters pertaining to pediartrics, passing on this information to the medical profession of the State so that they will become more interested in pediatrics and educating the laity along the lines which will lead to the prevention and lowering of infant morbidity and mortality, form the main objects of the Society.

Cost of Industrial Medical Service Doubled. Since 1916, according to the last report by the National Industrial Conference Board, the average cost of health service in some 207 plants employing 764,827 workers was shown to be $4.43 per person, the cost varying from $1.84 a person in the tobacco business to $24.40 in mining. Of these amounts 69.5 per cent. went to doctors, nurses and attendants, the remainder being for equipment, supplies and for outside medical and hospital service. About one-sixth of the plants with from 500 to 1000 workers employed a full time physician, while in 19 plants with more than 10,000 employees there was shown an average of six full time physicians for each plant.

A Pay Clinic, the first of its kind to offer a general service in New York City, was opened by Cornell University Medical College on November 1, making it possible for persons of moderate means to have the services of specialists at fees which cover the actual cost of service, and taking care of that class of persons whose means will not permit them to avail themselves of these services otherwise and who, also, are not in the class of those to whom the charity services are open. The clinic is open every afternoon from 1:30 until 4 o'clock, except Sundays and holidays and on Tuesdays and Fridays until seven P. M. The Cornell Medical Faculty will direct the clinics. Physicians in the clinic will be salaried and every effort made to preserve an atmosphere of dignity, privacy and consideration for patients, with the same personal feeling between patient and physician which usually characterizes private practice. The rates for treatment will be as follows: For examination and treatment, each visit, $1.00; medicine, laboratory tests, x-ray photographs and other supplies at cost; diagnosis of cases requiring special examination and study, with group consultation of specialists and diagnosis, $10.00; thorough health examination to discover possible defects from diseases and to obtain advice regarding personal hygiene, $2.50.

Pineville Is To Erect New Buildings in its Hospital for the Insane. The contracts call for three dormitories to cost $231,000 and a dining hall to cost $201,300.

Deep Roentgen Therapy. A new x-ray apparatus, known as the deep roentgenotherapy machine, which is designed so as to allow only the passage of high or peak voltage, is reported to have been perfected in Germany and Switzerland, while we hear that Duane, at the Crocker Institute, is working on a machine of this kind but up to now has not reported results as the treatment is still under trial. In various cases of malignancy, the patient is kept under treatment for hours at a time, and as the constitutional effects of such severe treatment are marked resulting in destruction of blood cells, transfusion of blood is frequently necessitated.

Foreigners Susceptible to Accidents. Quoting from the Ohio State Medical Journal, we note that "more than 50 per cent. of the fatal accidents which occur in Ohio industries are those of foreigners, or men who cannot read the English language. These men usually cannot read the precautionary measures posted by the Industrial Commission, and the employers, and are, therefore, unable to take care of themselves as well as American workmen. These warnings of danger are printed in several languages, but the foreigner either does not stop to read them, or neglects to follow the advice.''

THE PUBLIC HEALTH SERVICE has issued a preliminary announcement of a series of Public-Health Institutes to be held during the coming year at New Orleans, the first place, in January 9-13, and in many of the larger cities throughout the United States under the auspices of the State Boards of Health and the Service. To quote from the bulletin, the aim of the Institutes is ''not only the prevention of disease and the lengthening of human life, but also to have a greater degree of health and efficiency. It is concerned in all methods which help to achieve these ends and utilizes not only the medical sciences, but statistics, psychology, sociology, and education as well. Its progress during the last half century has been remarkable, since in all directions the field has expanded and in every portion of the field new vistas have opened. The record of past accomplishments is, however, only a promise of the contribution which the public health activities of the next 50 years may make toward the happiness and welfare of mankind.''

CANCER FUND. Hon. Hiram H. Mills, of Hingham, Massachusetts, left the sum of $200,000 to Harvard University for the study of cancer, this fund to be known as the Elizabeth Worcester Mills Fund in honor of Mr. Mills' wife. Mr. Mills graduated in 1889 from Harvard, with Master of Arts degree.

LOVING CUP AWARDED. At the Kansas City meeting of the National Anesthesia Research Society in October, Dr. A. E. Guedel, of Indianapolis, was presented with a silver loving cup for distinguished services in the field of anesthesia research, the honor intended to express the approval and admiration of the Society for the work already done by Dr. Guedel, to recognize his priority in gas anesthesia in obstetrics in America and to encourage his further efforts in that line. It will be the policy of the Society to make similar awards of recognition in the future for work of distinction in the field of anesthesia.

The Salvarsan Adulterations in Germany and other countries, which caused so much difficulty in the drug markets during the years 1919 and 1920, were recently taken up by the Criminal Court of the County of Hamburg and, after a trial lasting fourteen days, in which many experts were examined, the manufacturer, Gerloff, and his superintendent, von der Heyde, were sentenced to three and one-half years in prison and to five years disenfranchisement. Sixteen defendants received two-year prison sentences each, and sixty-two others who had conducted a flourishing business in adulterated Salvarsan were fined 20,000 marks.

The Jenner Memorial Medal of the Royal Society of Medicine has been conferred on Sir Shirley Murphy in recognition of his work in epidemiological research.

The Orleans Parish Medical Society, at a general meeting held December 10, elected the following officers for 1922: President, Dr. Wm. H. Block; 1st Vice-President, Dr. E. A. Fossier; 2nd Vice-President, Dr. P. Graffagnino; 3rd Vice-President, Dr. T. A. Maxwell; Secretary, Dr. Elizabeth Bass; Treasurer, Dr. J. A. Lanford; Librarian, Dr. S. C. Jamison. The following were appointed as additional members of the Board of Directors: Drs. C. V. Unsworth, M. J. Lyons and L. A. Ledoux. The installation meeting will be held January 9 at the Hutchinson Memorial of Tulane University.

Edinburgh Royal College of Physicians has honored Admiral W. C. Braisted, of Washington, D. C., and Dr. Walter L. Bierring, of Des Moines, Iowa, by conferring membership on them in recognition of the efforts of the National Board of Medical Examiners, of which they are both charter members, in promoting the closer relationship in matters of medical education between the Old and the New World. It is reported that these are the only honorary memberships conferred by the college since 1809.

The American Social Hygiene Association held its eighth annual meeting in New York City on November 18, 1921, and Dr. Hermann M. Biggs was re-elected president.

Personals: Dr. L. Emmett Holt, Emeritus Professor of Pediatrics in the Columbia University College of Physicians and Surgeons, New York, delivered the Lane Medical Lectures in the Stanford University Medical School, San Francisco, from December 5 to 10. He also gave a clinic on children's diseases.

Dr. Harvey Cushing, Professor of Surgery at Harvard Medical School, was elected President of the American College of Surgeons, at its anual meeting held in Philadelphia during the week of October 25.

On November 10, the French Government honored Dr. A. D. Bevan, the President of the American Medical Association by making him a member of the Order of the Legion of Honor. A banquet in celebration of the event was given, at which more than 200 physicians were present. The medal was presented by the French Consul at Chicago, with the statement that the honor was conferred by the French Government in recognition of the great service rendered in the recent War by the American Medical Association .

President Livingston Farrand, of Cornell University, was elected President of the American Child Hygiene Association at its annual convention in New Haven, on November 5.

MARRIED: On December 10, at Montgomery, Alabama, Doctor Homer Harris to Miss Margaret R. Wilkinson, daughter of Rev. and Mrs. Richard Wilkinson.

On November 24, Dr. Stephen W. Stafford, formerly superintendent Charity Hospital, and Miss Marie Aurore Tircuit, both of New Orleans.

On December 7, at New Orleans, Dr. Labasse Joseph Robin to Miss Lydia de los Reyes.

REMOVALS: Dr. H. G. Morris, from Kentwood to Baton Rouge, La.

Dr. O. M. Chapman, from Hampo, La., to Stilwell, Kans.

Dr. R. E. Ellzey, from Pleasant Hill to Cedar Grove, La.

DIED: Dr. William Porter of Ocean Springs, Miss.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for November, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	2	3	5
Intermittent Fever (Malarial Cachexia)		1	1
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough			
Diphtheria and Croup			
Influenza	8	2	10
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	26	24	50
Cancer	21	5	26
Rheumatism and Gout	1		1
Diabetes	6		6
Alcoholism	1		1
Encephalitis and Meningitis	1		1
Locomotor Ataxia	1	1	2
Congestion, Hemorrhage, Softening of Brain	23	7	30
Paralysis	3	3	6
Convulsions of Infancy			
Other Diseases of Infancy	12	10	22
Tetanus	1		1
Other Nervous Diseases	9	2	11
Heart Diseases	67	37	104
Bronchitis	4	2	6
Pneumonia and Broncho-Pneumonia	14	15	29
Other Respiratory Diseases	1	1	2
Ulcer of Stomach	3		3
Other Diseases of Stomach	2		2
Diarrhea, Dysentery and Enteritis	16	10	26
Hernia, Intestinal Obstruction	2	1	3
Cirrhosis of Liver	3	2	5
Other Diseases of the Liver	1	1	2
Simple Peritonitis			
Appendicitis	7	3	10
Bright's Disease	17	12	29
Other Genito-Urinary Diseases	11	14	25
Puerperal Diseases	1	4	5
Senile Debility			
Suicide	7		7
Injuries	27	20	47
All Other Causes	29	16	45
Total	327	196	523

Still-born Children—White, 18; Colored, 15; total, 33.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death rate per 1000 per annum for Month—White, 13.53; colored, 21.38; total 15.69. Non-residents excluded, 13.98.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.10
Mean temperature	67
Total precipitation	3.83 inches

Prevailing direction of wind, east.

NEW ORLEANS MEDICAL
AND SURGICAL JOURNAL

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Vol. 74 FEBRUARY, 1922. No. 8.

EDITORIAL.

ENLARGEMENT OF THE ADULT THYMUS.

In view of the reawakened interest in the above subject, as evidenced by the recent publication of articles on the subject, it will not be considered otherwise than appropriate for us to call attention to what may be termed pioneer work in that line by local confrères. It is always good to keep the record straight.

In the March 6, 1909, number of *The Medical Record,* Dr. Otto Lerch, of this city, published a preliminary report on "The Enlargement of the Thymus Associated with Nervous Symptoms." In June of the same year there appeared in this Journal a paper entitled "Thymokesis," by Dr. A. E. Fossier, also of this city, which had been read before the Orleans Parish Medical Society. Thymokesis was defined as meaning an enlargement not of the glandular tissue proper, but of its so-called relict found in adult life, when distended with blood. It was claimed that the gland could be "distinctly and sharply outlined by percussion" at all ages, even up to the extreme old age. In a good number of individuals, it was stated, a more or less pronounced bulging may be noticed which corresponds to the percussion outline, while in others percussion dullness denotes swollen borders. Attention was called to the fact that a change of the patient's position causes a variation in the area of dullness, probably due to the greater or lesser degree of the amount of blood and lymph present in the gland. The severity of the symptoms was found to correspond to the enlargement of the gland. The nervous condition, as evidenced by neurasthenic phenomena, including irritability, disturbed sensations, easy fatigue, tremor, slight ptosis, etc., is explained as being due to "intracranial venous congestion, over-stimulation of the vagus and sympathetic, and pressure upon tracheal vessels and nerves in a narrow, unyielding aperture."

Attention is called to this subject, and the above quotations are presented in order that due credit be given to our local friends now that the question is being handled almost as if nothing had ever been said about it.
officer and where he did heroic work during the epidemic of influenza.

NEW ORLEANS PUBLIC HEALTH INSTITUTE.

Under the auspices of the United States Public Health Service and the Louisiana State Board of Health a course of lectures was given at the Athenaeum during five days from January 9 to 13, 1922.

The attendance was not as large as the effort justified but the audience made up in interest and attention what it may have lacked in numbers, and the result, all in all, was quite worth while.

The list of subjects was quite extensive, including the venereal diseases, other communicable diseases, cancer, hygiene in its various departments, social work and sanitary engineering. The Institute was intended to interest and educate in the subjects designated, physicians and medical students, but especially state and municipal officials, nurses, social workers and those connected with industrial enterprises.

THE FUCHS LECTURES.

New Orleans was honored by the visit of Professor Fuchs, of Vienna, one of the leading authorities in ophthalmology today, who delivered two lectures on his special line at the Hutchinson Memorial and the Richardson Memorial, respectively, on January 11 and 13.

He was enthusiastically received and made a deep impression on his hearers. Those who had known him, many years ago, in his home and at the height of his activity and prosperity, found him the same plain, pleasant, unassuming gentleman and teacher, but could not fail to perceive an added note of sadness in his expression, no doubt due to the many vicissitudes said to have been experienced by him during and since the world war.

We hope his reception will be as cordial elsewhere as it was here, and that this eminent man will be largely repaid in many ways for his tour in this country.

DR. SAMUEL R. OLLIPHANT.

On December 26, in the neighboring town of Lafayette, there passed away Dr. Samuel Rutherford Olliphant, a good man, a true physician, and a former public servant, worthy of an honored memory in the State of Louisiana.

Born in our sister State of Mississippi, Olliphant came to New Orleans to complete his medical education in our great university, and began his life work here. After a few years service on the visiting staff of the Charity Hospital, he was appointed to the State Board of Health, which in those days also exercised municipal functions. In April, 1890, he became president of the board, at the head of which he remained until February, 1898, when to relieve the governor of any possible embarrassment, the members of the State Board of Health resigned following the yellow fever invasion of 1897.

When we remember that sanitary science was in its infancy in those days, the record of progress made by the Board of Health under the Olliphant regime is eloquent of faithful work accomplished with scanty means and in the face of public indifference.

That board was the first to station its own medical inspectors at tropical fruit ports and to compel steamers of the regular passenger lines in that trade to carry physicians selected by the board, thereby guarding against the danger of mild cases of fever slipping past quarantine. Among notable items of progress in municipal work may be mentioned: The establishment of a chemical laboratory, fully equipped and under the direction of a chemist of national reputation.

Making the inspection of slaughter-houses real and efficient by placing a high-grade veterinarian in charge instead of a political appointee.

Establishing a service for the inspection of food in the city markets.

Improvement of the milk-inspection service, previously lax and faulty.

Founding a bacteriological laboratory, then a novelty except in the very large cities, with the justly celebrated Dr. P. E. Archinard in personal charge, and later sending him to Europe to study the production and administration of diphtheria antitoxine at the fountain head.

While thus placing mile-stones of progress in municipal sanitation, all the maritime approaches to New Orleans were so well guarded that the most searching investigation has never been able to show any infection to have entered by those routes. Unfortunately the gulf coast of Mississippi, supposedly under protection by federal quarantine, became infected with yellow fever masquerading as dengue, in the summer of 1897, with the result that our ancient enemy slipped in "by the back door" from Ocean Springs, where, as was later proven, filibusters had established headquarters in the home of a patriotic Cuban lady, who afterward admitted that a case of yellow fever had occurred there in the spring of 1897.

In that way New Orleans and Mobile became infected, and the public, reasoning only that the Board of Health had failed to keep the fever out, clamored for the resignation of those whom they thus blamed. Dr. Olliphant, conscious of having done his duty, moved to New York, where he easily established himself, being absorbed as one of the staff of the DeMilt hospital, with a suburban residence at Mt. Vernon, a "village" of fifty thousand people, by whose vote he was chosen local health

With gradually failing health, this faithful servant returned to his own people to die, attended in his last hours by his wife and her devoted family. All honor to his memory!

ORIGINAL ARTICLES.

(No paper published or to be publisheed in any other medical journal will be accepted for this deparment. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expeceted to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

ENCIRCLING OF A FUSIFORM ANEURYSM OF THE ASCENDING PORTION OF THE AORTA.*

(Notes of Doctor Tuffier, Faculty of Paris, A l'Hôpital Beaujon.)

Translated from Archives Franco-Belges de Chirurgie, by Dr. H. E. BERNADAS.

Operation: Incision of skin and subcutaneous tissues; I incise the Pectoralis Major and come to the first and second intercostal spaces. Section of second rib. I separate this and place a retractor. I now have a large opening. Introducing my finger behind the sternum, I immediately feel the arch of the aorta. The tumefaction of the aneurysm extends more toward the right.

I now cut through the sternum and separate the fragments; this gives me a large operative field. I dissect the cellular tissues to the aorta, taking special care to avoid the veins; without hesitation I now separate its tunic. The hemostasis is perfect. We now see the pulsation of the large arterial vessels. I now separate the aorta from its relations to the vena cava on one side and the pulmonary artery on the other. In endeavoring to encircle the aorta in the rear, with my finger, I encounter a partition situated on a level with the aortic concavity, a rigid septum which I lack the courage to break through, fearing a hypothetical bronchial artery, whose hemorrhage, following a rupture, would be difficult to control. Through a small opening in this partition I am able to introduce my finger and at this junction a curved needle and finally a catgut strand. This done, from the right thigh of the patient I remove a quadrilateral segment of fascia lata, which I will use to strengthen the aneurysmal walls. Two bridles placed in the angles of this segment permit me to attempt the encircling of the aneurysm, by tying these bridles to the catgut which I have just passed around the aorta.

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*Read before the Orleans Parish Medical Society, November 14, 1921.

But the opening in the fibrous partition is not sufficient to permit the passage of the segment of fascia lata. Under these conditions I tie the thread around the aorta, narrowing its caliber, thus diminishing the inter-aneurysmal pressure. Subsequently, the segment of fascia lata having been stretched and sutured to the anterior wall of the aorta, thus doubling and consolidating the wall, I have a diminished tension in the aorta and a supported anterior wall.

All relations are now restored, layer by layer. The sternal fragments are approximated and sutured with catgut.

The day following the operation I made note of several errors in the technic employed. *First,* that of having created and permitted to remain behind, a right pneumo-thorax; *second,* not having replaced the sternum perfectly in its position; moreover, the numerous doctors who assisted this operation, leaned over the operative field and infected it.

FACTS ABSTRACTED FROM ARTICLE BY M. L. RENON,
professeur a la Faculté de Medecine de Paris, membre
de l'Académie de Médecine

Patient was a female, 62 years old, negative Wassermann, syphilitic. Operated on May 14, 1914; died October 28, 1920, six and a half years after operation, from the recurrence of an inoperable uterine cancer, which had been rendered operable by radium, and a pan-hystectomy done April 22, 1920. Patient derived a certain benefit from operation from the symptomatic viewpoint and the viewpoint of her aneurysm. General condition better, intra-thoracic pains diminished, although they did not entirely disappear and there were occasional paroxysms of pain. The benefit obtained was probably due to a relief of the mediastinitis by dissection of the aneurysms. The reduction in size of aneurysm, at first obtained, was not permanent, and in 1920 the diminution over its former size was not very notable.

	Tranverse diameter	*Cord*	*Ascending Aorta*
1914	6.2	4.2	4
1920	5.7	3.4	4.2

Rénon concludes with looking forward to the day, quoting M. Vaquez, "Where the domain of cardiac intervention will reach to medical cardiac lesions, and where a surgeon, blamed today for too rash interference, will probably be found culpable for having refused these resources to patients irremediably lost.''

BLOOD TRANSFUSION IN OBSTETRICS.*

By E. L. KING, A. B., M. D., F. A. C. S., Instructor in Obstetrics, College of Medicine, Tulane University of Louisiana.

Transfusion of blood has been for some time a therapeutic procedure of proved value, and it is routinely employed in the treatment of severe hemorrhage. Direct transfusion is theoretically preferable, but technically more difficult, so that the indirect, or citrate, method is the one generally employed. It is often followed by a reaction of varying intensity, in spite of the compatibility of the bloods. This occurs, according to Polak, in about 60% of the cases. The objection has also been raised that, due to the manipulations and to the use of glass containers, rubber tubing, etc., obscure and complicated changes take place in the blood which make it less suitable than blood directly transfused. Hence, Bernheim especially has of late been advocating the direct, rather than the indirect, method. The cases forming the basis of this report were handled by the indirect method, with one rather mild reaction. The donor's and the recipient's sera and corpuscles were tested against each other, as it has been found that occasionally donors pronounced safe on the basis of grouping according to the methods of Moss and others have not proved satisfactory clinically. The testing is quickly done by a serologist, and the report is ready by the time the preparations for transfusions are made. We have employed transfusions in four classes of cases: 1, hemorrhage; 2, puerpal infections; 3, hemorrhagic diseases of the newborn; 4, pernicious vomiting. The indications in case of profuse hemorrhage is clear, and we will consider that group first.

Case 1. Severe postpartum hemorrhage after footling delivery in a primipara. Packing controlled the bleeding, but her condition was very grave. 500 c.c. of blood were donated by a nurse who was a close friend of the patient. Recovery was uneventful.

Case 2. Profuse bleeding in a case of hydatid mole. Patient's mother gave 500 c.c. of blood. Condition changed from very critical to satisfactory. The cervix was partly dilated by a bag, was incised, and the uterus was emptied. Recovery.

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*Read before the Orleans Parish Medical Society, November 14, 1921.

Case 3. Extra-uterine pregnancy. Admitted by me for operation. Sudden secondary rupture of the hematoma, with free bleeding. She was operated upon by Dr. W. O'D. Jones, as the interne could not locate me. Her condition was extremely grave. She was transfused, her husband being the donor. Recovery was uneventful.

In the second group—i. e., puerperal blood-stream infection—the indication is not so generally admitted. Poor results have been reported following transfusion in surgical infections by several observers. Polak, however, contends that, in these poor results, the failures were due to the fact that transfusion was performed as a last resort and was not used early enough. He reasons that early and repeated small transfusions are preferable, and bases his opinion on the following arguments: Transfusion lessens the secondary anemia; 2, it supplies normally active leucocytes for temporary defense; 3, it permanently raises the blood pressure, "which helps to restore the functional activity of the organs which bear the brunt of the defense.'" He claims that the real value of transfusion is the stimulation of the tissues to increased cellular proliferation, and that the use of large amounts of blood is not wise. The hemoglobin percentage is raised and the leucocyte count is increased, but both rapidly fall, hence Polak claims that, by resorting to the transfusion of 250 to 300 c.c. of blood every third day (instead of the usual 500 c.c.), the leucocytosis can be maintained with a consequent more favorable prognosis.

Following his suggestions, we have transfused three patients who were desperately ill. One had a streptococcic bacteremia, one a colon bacillus blood-stream infection, while the third was suffering from pelvic thrombophlebitis with apparently intermittent bacteremia, though we were never so fortunate as to secure a positive blood culture. The details follow:

Case 1. Streptococcic bacteremia, no pelvic lesions, infectious arthritis of left wrist, chills and septic temperature. The probable etiology was as follows: vaginal examination without asepsis in a clinic the day before delivery, premature rupture of the membranes, and finally a tub bath after rupture of the membranes. Her condition grew progressively worse, the temperature varying between 104 degrees and normal. 250 c.c. of citrated blood were transfused from husband on the fourteenth day. The improvement was immediate, and was so marked that the transfusion was not repeated on the third day, as advised byPolak. There was a gradual fall of the temperature, till it reached normal on the 24th day. On the thirty-third day the temperature began to rise again, reaching 104 or 104.5 degrees daily. 250 c.c. of blood were transfused from the same donor on the fortieth day. This was followed by a reaction, her temperature reaching 104. The temperature became normal on the forty-second day and continued thus until the forty-eighth day; after that she had irregular mild fever for about two weeks, but only one more chill. She was discharged after two weeks of normal temperature and is at present in excellent health and is pregnant again.

Case 2. Colon bacillus bacteremia, following prolonged second stage prior to admission, low forceps delivery of a dead fetus, and manual removal of the retained placenta. She had chills and septic temperature; there were no local pelvic lesions. She was transfused from her mother, but it was too late, as the patient died the next day; not, however, from the effects of the transfusion. If it had been done earlier, she might have been saved.

Case 3. Puerperal thrombophlebitis of pelvic veins, following manual removal of the retained placenta prior to admission. The patient also had a heavy hookworm infection. She had repeated chills, at times three or four per day, with temperature going to 104 or 105 degrees. The husband's blood was not compatible. Blood was finally obtained from a healthy obstetrical patient awaiting delivery. There was no reaction. Immediate subjective improvement followed, but fever persisted for three days; after that it became normal and remained so. No more transfusion was needed. It may be that she was practically well and about ready to stop having chills when transfused, but the improvement was certainly striking.

The third subdivision deals with the obscure condition known as hemorrhagic disease of the newborn, often incorrectly called hemophilia of the newborn. It develops within the first week of life, is not traumatic, most frequently follows spontaneous delivery, and is characterized by multiple hemmorrhages, such as subcutaneous ecchymoses, epistaxis, hematemesis, melena, hemorrhage from umbilicus, vagina, penis, etc. Holt states emphatically that it is *not* a manifestation of hemophilia, and gives the following reasons: 1, of 576 cases of hemophilia collected by Grandidier, only twelve have a history of hemorrhage when the cord separated; 2, symptoms of hemophilia very rarely appear before the first or the second year; 3, there are thirteen male hemophiliacs to one female, while in hemorrhagic diseases of the newborn the males are only slightly more numerous; 4, hemorrhagic disease of the newborn is self-limited, it only lasts a few days or weeks, and the patient either dies or recovers. They can be operated upon later without an unusual amount of hemorrhage being noticed. Furthermore, hemophilia is often hereditary, while the other condition is not. The frequency of the disease is reported from various clinics as varying from 6% to 8%; at Charity Hospital the former figure would be approximately correct. Fetal syphilis has been advanced by some as an etiological factor, but it is found in only a small percentage of the cases. Holt states that it is often associated with fetal sepsis, but this is by no means invariable. Bacteriological study of many cases has been uniformly negative. Brewer thinks that it is a congenital malformation of the blood of unknown chemical nature. The prognosis is very grave, the mortality being 79% in 709 cases collected by Townsend.

Medical treatment of this condition is very unsatisfactory. Of eighteen cases at the New York Lying-In Hospital treated medically (before 1910) seventeen died. J. E. Welch then began to use human serum there and cured twelve cases in succession. He used 10 c.c. or more subcutaneously three times a day. The mother's whole blood is often used, one-half to one ounce being injected under the skin of the back or into the buttocks. Transfusion was first used by Carrel and Brewer (quoted by Crile), with wonderful results. As Brewer stated, there was no convalescence; the baby was almost moribund before the transfusion, and was in perfect health immediately thereafter. They used the direct method, suturing the baby's right popliteal vein to the father's left radial artery. H. Woltman (*Jour. Am. Med. Assn.*, about one and one-half years ago) reported a case cured by the injection of 60 c.c. of citrated paternal blood into the baby's median basilic vein. Another case was reported in the same journal several years ago (I have not located the exact reference), in which direct transfusion was performed with cure, using the baby's femoral vein. Doubtless many other cases can be found in the literature.

In view of the unsatisfactory results of medical treatment, I decided to try transfusion on the next case that presented itself. The methods requiring the use of the veins appeared to be technically rather difficult, so I consulted our pediatric friends about the use of the anterior fontanelle, which they puncture routinely in obtaining blood for the Wassermann reaction and in administering salvarsan. They assured me that it was quite easy, which I verified by dissecting the fontanelle and the superior longitudinal sinus of a stillborn baby. I cannot say whether the fontanelle has been used by others for transfusion. The only danger is that of going too far and injecting the blood beneath the dura; this can be easily avoided.

Baby W. B. was admitted when three days old. He began to bleed the day after delivery from the umbilicus. On admission there was oozing from the umbilicus, melena, and extensive ecchymoses under the skin of the neck, the chest, the scalp, the right side of the forehead, and the right upper eyelid. The baby was fretful, anemic, and had irregular fever. Calcium lactate was given, without benefit. The mother's blood was compatible, so 50 c.c. was injected (citrate method), using a large glass syringe. The baby was pinned in a sheet, its head was slightly extended over the edge of the table and steadied by a nurse, and the needle was introduced into the center of the fontanelle and directed obliquly backward. The sinus was easily entered and blood flowed from the needle. The syringe was attached and the blood was slowly injected. The blood had been obtained with some difficulty from the mother and showed some tendency to clot in spite of the sodium citrate, so it was filtered through gauze before being injected. Thus may be explained our partial failure, for, while the baby was markedly improved, some oozing continued from the umbilicus, which was later transfixed with a needle, around which a ligature was tightly wound. The next day, as there was still a slight ooze, 10 c.c. of horse serum was administered subcutaneously, following a suggestion by Dr. Duval. There was no further bleeding, the ecchymoses disappeared, and the baby was discharged on the eighteenth day. A later report states that the child is in excellent condition.

As these cases are not common, none of us see many of them, but I can recall several that have died; also two rather mild cases that have recovered under medical treatment. Dr. Emmett Irwin has since transfused another baby at the Charity Hospital by this method, with immediate cessation of the bleeding. The child was exsanguinated on admission, however, having been bleeding for four days, and it did not recover.

I have transfused one case of pernicious vomiting, thinking that perhaps that a supply of fresh blood would help the patient to overcome her toxemia. She was *in extremis*, having been ill for about two months, and died about thirty hours later, in spite of delivery by vaginal hysterotomy. It seems to me, however, that transfusion should be of value in these cases.

While this series is small, I feel that our results have been encouraging, and that we are justified in continuing the use of transfusion along the lines indicated above. I wish to thank the various members of the interne staff at the Charity Hospital who have been on the obstetrical service for their invaluable aid and enthusiastic co-operation.

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DISCUSSION.

Dr. R. D'Aunoy: Dr. King has opened for discussion a very interesting and important subject. It appears as if in our community the valuable procedure of blood transfusion is not made use of as often as the results achieved following its use would warrant. The records of our great Charity Hospital show that during the last two years nineteen transfusions were performed. I am informed that at Touro Infirmary comparatively few transfusions are performed. Usually difficulty is encountered in securing donors; even with near and dear relatives involved many people hesitate to act as donors. At a recent clinical meeting of our Society held in conjunction with the Charity Hospital staff, Dr. Guthrie made a plea to the hospital authorities to secure a list of professional donors. Such a suggestion, if adopted, would help greatly to popularize transfusion in our medical center. These donors would be readily available, their blood types known and all laboratory tests previously performed, causing little loss of time to our physicians desiring to make use of transfusions. The methods of transfusion are at the present time, as Dr. King has already pointed out, indeed simple. Undoubtedly the citrate method is, and deservingly so, the most popular. I have seen numerous successful transfusions performed with a 20 ml. syringe and a flask of sterile citrate solution. The typing of donors and recipients of blood, due to the contributions of Moss and others, is at present a simple matter. Commercial houses supply the necessary typing sera with full instructions as to their use, and the most elaborate equipment the physician needs is a glass slide and a blood sticker in order to properly determine the compatibility of various bloods. Speaking from an experience of over two hundred (200) blood typings and transfusions, I can say that I have never seen any untoward results following the administration of properly typed blood. If the blood is mixed with a small portion of citrate solution before being brought in contact with the typing sera, the results are always clear-cut and need never be mistaken.

In cases of infections, the at times marvelous results noted after transfusions are not readily explained. The views held by Polak and outlined by Dr. King do not appear entirely explanatory. The comparatively few leucocytes introduced with normal blood can hardly have such far reaching powers. Again, phagocytosis is most probably not the only factor concerned in infection. If we resort to the ideas of Ehrlich in explaining the factors concerned in immunity, we note that the combatting of infections is due in great part to the power somatic cells have of producing immune bodies, which immune bodies help in either directly counteracting the poisonous product elaborated by micro-organisms, inhibiting the growth of micro-organisms, or else, in causing actual lysis or destruction of micro-organisms. The latter class of immune bodies are the bactericidins and the bacteriolysins, which bind their specific antigen to alexin, allowing this latter constituent of normal blood to cause the actual inhibition or lysis of the baneful organism. Alexin is affected by a number of factors, socalled complementoid and anti-complimentary bodies being readily formed. It may be that the amount of alexin which we introduce with normal blood serves to re-inactivate complementoid bodies as happens so often in vitro. Again, the relatively large amount of alexin introduced may help by its own direct action to combat the infection. Undoubtedly in addition normal immune bodies present in all normal bloods exert considerable influence in overcoming the infection. The subject is one which is but imperfectly understood and we can but offer fanciful ideas in attempting an explanation.

Dr. E. A. Ficklen: Although transfusion has a certain usefulness in the treatment of shocks, infection, pernicious anemia and other pathological conditions, the most dramatic results are obtained in hemorrhage. More than a mere mechanical result is obtained, as a transfusion of 200 c.c. of blood may transform a patient almost moribund from a severe hemorrhage into a good surgical risk. Ten months ago I transfused a case of purpura rheumatica hemorrhagica. There was a change for the better in twelve hours and ultimate cure. No more hemorrhage occurred and the pain was much lessened. I join Dr. King and Dr. D'Aunoy in their plea for a more widespread utilization of this procedure.

Dr. F. W. Parham: Regarding the compatibility of bloods: Last January I had occaion to transfuse a case for repeated hemorrhage. We did not know whether it was due to previous loss of blood, but finally concluded it was a case of secondary anemia. I transfused this man and we had a most violent reaction. Whether there was some mistake in the grouping of the bloods, or in the technic, or something else occurred, we did not know. That is why I say that, although we may have bloods of the same groups to mix, we may have trouble occasionally, due to some of these minor agglutinins which do not show in the grouping tests. Therefore, the individuals ought to be tested against each other. If we are in a great hurry to transfuse the patient, and have a number of donors, we would take group four, unless one of the prospective donors was in the same group as the recipient, but, if we have time, I think we ought to, if possible, test one blood against the other.

Pemberton, at the Mayo Clinics, reported 1,000 cases; Lewisohn 200, and Garbat 100, by the citrate method, making a total of 1,300 cases transfused without mishap. Yet, last January, in my own experience, as stated, I had a very serious result in a case where the donor was in group 4. I overcame this by giving ether but not to surgical anesthesia.

There is less danger where both donor and recipient are in the same group. In emergency, the donor may be taken from the universal donor group 4, but where circumstances permit, it is safest to test one blood against the other.

Dr. E. L. King (Closing): I am glad that the speakers emphasized the necessity of testing the bloods directly against each other, in addition to the grouping.

Dr. Ficklen states that he is of the opinion that there are no female hemophiliacs. Holt is the authority from which I obtained the figures: "thirteen males to each female hemophiliac."

As regards "reaction," we must bear in mind that at times the same may be due to the rubber tubing used in the transfusion. This has been emphasized by the workers at Mayo Clinics in connection with the administration of Salvarsan.

REPORT OF A CASE OF RAYNAUD'S DISEASE.*

Dr. R. S. CRICHLOW, A. A. Surgeon, U. S. P. H. S.

In 1862 there appeared an article in *L'Asphyxie Locale,* a medical journal published in Paris, France, by Dr. Raynaud, setting forth certain symptoms or syndrome that he had observed in conditions which he regarded as vasomotor neuroses; namely, ''Attacks of cold, dead bloodlessness in the fingers or toes as a result of exposure to cold or to emotional excitement (local syncope). In the more advanced cases there are capillary congestion and mottled and livid swelling (local asphyxia). Later, still in more advanced cases, thrombosis and resulting gangrene which is usually symmetrical.''

The case that I am reporting tonight includes all the above stages and has for its causative factor exposure to cold and wet together with mental strain and physical exertion.

The patient in question came under my observation November 26, 1919, when I was called to his home for the purpose of making an examination of him and to refer him for treatment. He has been under my observation and treatment since that time, having received surgical treatment from Dr. Carroll Allen and later Dr. John Smyth, Surgical Consultant for Veterans' Bureau.

Mr. K., age 35, married. Occupation, carpenter. Mother living and well. Father died of infection at age 42, cause unknown. Three brothers; one living and well; two died in infancy, cause unknown. Three sisters, two living and well; one died in infancy, cause unknown. Previous history:: Usual diseases of childhood, malarial fever two years ago. No other illness. Venereal history negative.

Present illness: Began in September, 1918, about one mile from Verdun, France; six weeks previous to that time he had spent on the front during which time he had suffered from cold and especially his feet and legs wet. He first noticed numbness in his hands and feet, and later he noticed that at times his feet and hands were cold and clammy; these attacks were also associated with cramps in the legs. This condition gradually grew worse, and in November he noticed that toes of both feet were purplish in color. About the middle of November he started on a hike into Germany, and when about forty miles out of Luxemburg, he had to ask his captain to send him to the hospital on account of the marked swelling and redness of his legs and feet. He also stated that during October and November his feet were wet the greater part of the time, and that while they were not frozen, they frequently got pretty cold.

He was evacuated to Base Hospital 30 at Toul, France, where he was treated for six weeks, the principal treatment being hot and cold applied alternately to his feet. He returned to United States and was discharged April 30, 1919. During the latter part of March of that year he began to have trouble again with his feet and called a private physician under whose treatment he remained until seen by me.

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*Read before the Orleans Parish Medical Society, November 14, 1921.

Physical examination: Well developed, fairly-well nourished, in bed with feet wrapped in flannel and complaining of intense pain, more marked in left foot. Pulse 80, temp. 98.4. Teeth have some cavities; oral hygiene fair. Throat, tonsils somewhat enlarged. Chest round and long. Lungs, negative. Heart, negative. Blood pressure, systolic 130, diastolic 80. Abdomen, negative. Extremities, superficial veins very small, hands and feet cold and clammy. Toes of both feet markedly cyanotic; also moderate cyanosis of fingers of both hands. Watery blisters were beginning to form about the toenail of left little toe. The pain in left foot was so great that he could not bear the weight of the cover. He was referred to U. S. Marine Hospital, where he remained about two weeks, at which time he asked to be discharged. He then consulted Dr. Carroll Allen, who advised that he go to Touro for observation, and upon applying to the B. W. R. I. was sent to Touro. On account of gangrene having set in on the left little toe, on Jan. 4, 1920, Dr. Allen removed toe under local anesthesia. This not giving relief from the intense pain and because of beginning gangrene on great toe, left foot, on Jan. 8th, under local anesthesia, by nerve blocking and infiltration, he amputated foot at tarso-metatarsal articulation.

At the time of this amputation there was absence of pulse in the dorsalis pedis artery and very weak pulse in posterior tibial artery. While no adrenalin was used during operation, bleeding was so slight that no vessels had to be tied. Following this operation his condition seemed to improve and he was apparently free from pain until February 20, 1920, when he was again admitted to Touro and second toe of right foot removed on account of gangrene. In April of 1920 he was referred to Dr. John Smyth, Surgical Consultant for B. W. R. I., and was admitted to Hotel Dieu for treatment of gangrene of second finger, right hand, which he amputated at the metacarpo-phalangeal articulation. From this time an Esmarch constrictor was regularly applied to arms and legs once daily and in time he was taught how to use it. In May, 1920, he was admitted to Presbyterian Hospital on account of beginning gangrene of great toe, right foot. At this time there was an absence of the pulse in dorsalis pedis artery and also posterior tibial. Efforts were made to save any further operation except to treat the gangrene locally, but the patient continued to suffer so much pain and there being evidence of beginning gangrene on heel of right foot, it was decided to amputate the right leg at the lower third, which was done by Dr. Smyth on July 10, 1920.

Following this amputation, he made an uneventful recovery and for one year has been free from pain, and is now using an artificial appliance for both feet with very good success.

At each one of the hospitals where he was treated the routine laboratory examinations were made, with the following results: Wassermann, six times negative. Blood for malarial plasmodia, negative many times. Urine, negative, except at times contained a few granular casts. Blood counts ranged from 6000 to 8000 total whites with normal differential count. Hemaglobin from 70 to as low as 60. Blood pressure has ranged from systolic 90 to 140. to diastolic 70 to 80. Although he has had repeated negative Wassermanns he was given six doses of .6 gram of neosalvarsan while at Presbyterian Hospital. In medication he has been given large quantities of sodium citrate, iron and potassium iodide in increasing doses. All medication has been stopped for four months, but he continues to use constriction about extremities once daily.

During the past year his circulation has markedly increased, especially in the fingers of both hands, as well as stumps of lower extremities. His general condition has improved and he has added 25 lbs. in weight.

DISCUSSION.

Dr. Jno. Smyth: When the patient was first seen by me, the second or middle finger of the right hand was hopelessly gangrenous, the other fingers white. The entire hand was bluish, mottled and cold, and the site of agonizing pain. Some pain was complained of in left hand and congestion was marked. Patient did not seem to be suffering seriously with his feet. The use of the constrictor (Cushing's suggestion) was followed by improvement in both hands. The subsequent trouble in his foot is believed to be due to infection in region of nail of great toe, the cleanliness of this being less than the hands, together with the lower resistance in the foot.

It is interesting to note that the constrictor produced violent pain, and, as improvement progressed, redness and abnormal heat, symptoms which usually accompany spontaneous recovery.

As the circulation improved and parts approached normal, the pain, redness and heat accompanying and immediately following application of constrictor, gradually became less marked.

Blood Wassermann was negative, and as patient refused to submit to spinal puncture, neosalvarsan was given. The neosalvarsan may have contributed toward recovery in this case, since it is known to affect gangrene favorably in other parts, notably in gangrene of the lungs, as reported by Reichman, Stepp and others, who claim it to be of great value in this condition, even in cases with negative Wassermann and in which no spirilli were found in the sputum. Pepper, in discussing these cases, states that "It seems improbable that all of these cases were actually cases of spirillosis, and yet it is equally as probable that it is in the limited group of cases that such treatmenet would be of greatest value."

Repeated examinations of blood failed to show any form of malarial parasite, yet he was given quinine because of the possibility of chronic malaria being a contributing factor.

Verneuil and Petit called attention to this as early as 1883. Almartine reports three cases in which the pathological examinations showed them to be due to "obliterating endarteritis." They showed the undoubted effect of the hematozoon in producing this endarteritis with subsequent gangrene. White, from experiences in Malta, states that paludal gangrene in the limbs practically always occurs in latent malaria, and in patients giving no history of malaria, the sub-tertian types. The possibilty of syphilis being a cause in these cases was eliminated by the fact that the Wassermann was negative in all instances, and histological examination showed nothing similar to the lesions met with in syphilis. Those cases presenting the clinical manifestations of Raynaud's Disease give a more favorable prognosis than those of the massive type.

After exhausting all means at our disposal, amputation was done only as a last resort, owing to the increasing gangrene-spreading infection and the intense pain which could not be controlled even by large doses of morphia.

REMOVAL OF FOREIGN BODIES FROM THE EYE.*

By H. DICKSON BRUNS, M. D., New Orleans.

Hardly do we think of the foreign bodies in relation to the eye than we inevitably and automatically perceive that all cases must be divided into those in which the foreign body is merely *on* the eye and those in which it is *in* the eye.

When a foreign body has penetrated into the eyeball the injury is so serious and the apparatus and skill necessary for its removal so special, that I hardly think it would be profitable to consider them now.

They must all, sooner or later, find their way into the hands of the oculist. These are the cases in which the magnet is used with ease to the operator and the least damage to the patient, for the penetrating body is usually of magnetic nature. The giant electro-magnet devised by Haab, of Zurich, for the removal of bodies from the interior of the eye, is so ponderous and expensive as to be an absurdly unprofitable investment even to the specialist, unless he lives in a region where accidents of this kind are of daily occurrence. Thus, the Haab magnet installed at the Eye, Ear, Nose and Throat Hospital of this city, still remains, so far as I know, the only one in the South. The instrument is strong enough to pull a bunch of keys from the clenched fingers approached to within three or four inches of the pole. It is needless to say, that so powerful an apparatus must be used with caution and only by one who has had some instruction. Otherwise, more damages may be done by the extraction, than by the entrance of the offending body. The rules for the use of the Haab magnet have been the subject of many disquisitions by numerous men, but I still follow those laid down by Haab as the result of his vast experience. One fundamental rule is that the patient should never be laid upon a table or seated with his head against an immovable head-rest. For, as the body leaves its bed under the influence of the magnet, a strange feeling, usually a sharp pang, is experienced, which causes the patient to pull away, and this more instantaneously diminishes the pull of the magnet and lessens the risk of undue violence, than any manoeuvre the surgeon can initiate. Hope of successful removal diminishes with the length of time the body has been in the eye. The sooner the magnet can be applied the less likelihood of the foreign body being fixed in its position by tissue changes. I say this because, while the Haab magnet is out of the question, were I a surgeon in a town of a few thousand inhabitants, I should certainly own a good hand magnet. Not with the idea of attempting extraction of foreign bodies from within the eyeball, but for the purpose of pulling out those stuck in the tissues.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

There is probably no small operation more embarrassing than the removal of a non-magnetic splinter which has penetrated the cornea; for the difficulty of extraction is enhanced by the obligation to leave behind the least possible scar in a membrane, the transparency of which is all important. If the point of such a splinter enters, or almost enters the anterior chamber, our efforts to seize its outer end may only lead to our driving it deeper and deeper, into the iris, perhaps into the lens. The accepted practice in such cases is to enter a keratome, a tri-angular lance knife, through the margin of the cornea (limbus) while the eyeball is steadied with a fixation forceps. The point of the keratome is held against the penetrating end of the splinter to prevent its being driven in further by our efforts to lay hold of its outer end with the fine forceps we have substituted for the fixation forceps. This method is, of course, impossible if the end of the splinter has penetrated the iris and lens as well as the cornea. In this case we must make an incision embracing the point of entrance of the splinter. With a Graefe knife, the miniature knife like a steel knitting needle flattened and made sharper than a razor, we tranfix the cornea at a few mm. from the wound, pass the knife across the anterior chamber, bring it out at a point about the same distance on the other side of the point of penetration, and cut out. The end of the splinter now lies free in the incision, and the aqueous having escaped and the cornea collapsed, we can lay hold upon its end and draw it out. These are the general principles that guide us in such cases, but as they are curious in their variety the surgeon must often use ingenuity and invention. It is clear these procedures are delicate and to unpracticed hands difficult, and the instruments not usually found in an ordinary armamentarium. Prolapse of the iris, moreover, often happens and calls for iridectomy. For it is a sound principle that a prolapsed iris should be cut away, not reduced, lest it carry with it something pathogenic from the conjunctiva into the anterior chamber. But the whole scene changes if the penetrating body be magnetic, as it is in the great majority of cases. For the best hand magnets, even the small ones, are able to extract most metallic slivers successfully. The magnet also removes the small bits of iron which so often enter the eyes of workmen, penetrating only the epithelium, or at worst, the superficial layers of the cornea, with the least amount of traumatism. And traumatism, it cannot be too often repeated, is fatal to the function of the cornea. Peripheral scars are bad, but the smallest and faintest (nebula) at the centre may reduce a perfect eye to a very poor one. A central nebula imperceptible to the unaided eye may cut down vision from 20/15 to 20-70 or less.

These little foreign bodies on the cornea, however, are often cinders, bits of coal or are other matters not magnetizable. There is nothing for it then but removal by means of some instrument. This should be a match, a wooden tooth pick, a short applicator or probe with a bit of absorbent cotton tightly twisted about its end. It is surprising how many offending particles may be removed in this way without the least scratching of the cornea. Standing behind the patient, who sits facing the source of light, his head covered with a towel resting against the surgeon's chest, the operator holds the lids with the thumbs and forefinger of one hand. He directs the patient's gaze here or there until the foreign body is well seen; then, with a quick motion of the fingers, he makes the cotton-wrapped tip of his probe describe a short curve from above downwards, which strikes the body at the height of its convexity, at the point where the curve is tangent to the cornea, and ends with the probe tip well away from the eyeball. This should be done lightly at first, and then with a little more and more force, until we are convinced that the body cannot be removed in this way. On the other hand, if we are successful we should find the body sticking in the cotton on our applicator or in the lower conjunctival cul-de-sac where we knocked it. If properly done the cornea should not have been abraded in the slightest.

When not successful in this way, we are driven to the use of the more dangerous metallic instruments. The best of these is probably the spud, flat on one side, rounded on the other, having a dull edge and no point. We may try to use it just as we did the cotton-tipped probe. Failing in this, we place the edge of the spud's point, the curved side, towards the cornea, above and against the foreign body, and with a quick, downward and outward flip try to turn it out of its bed. This, too, may fail if the body has penetrated a little distance, or if it be one of those hot bits struck off of beaten iron which the workmen call a "spark," which fuse themselves into the corneal surface. Then it becomes evident we shall have to resort to picking out what we have by this time come to regard as our enemy, with a sharp point. We may use an old Graefe knife, but it is better to keep for the purpose an old one of those flattened needles known as discission needles. Now our whole effort must be to remove the body as quickly as possible with the infliction of the least damage. We insert the point of our instrument from above, from below, from one side and then from the other and try with a quick snap-like pick to throw it out. If the foreign body be iron or a spark, its site will be marked by a narrow rust-colored ring or its whole bed be lightly stained. We need not be too insistent on removing every trace of these little brown rings, they will disappear in a few days, but if the staining be deep or unusually extensive, it had better be lightly scraped away. But the more we abrade the cornea the longer the time required for healing and the greater the danger of infection will be. Better leave a little stained tissue than to cause too widespread, especially too deep destruction. You know that so long as the epithelium only of the cornea is destroyed, repair takes place without a scar, but once the basement membrane—the membrane of Bowman—and the true substance of the cornea is penetrated a scar is bound to result.

Foreign bodies either on or in the conjunctiva will cause little anxiety. When on the conjunctiva, they are usually under the upper lid and are then commonly found in the minute sulcus that runs along and just behind the free edge of the lid. Every physician ought to learn to turn the lid without awkwardness on his part or distress on the patient's. This awkwardness usually arises from laying the match or pencil, or whatever may be used, flat upon the lid, so that it becomes caught when the lid has been evicted. It is the point of the instrument that should be placed on the lid at the middle of the wrinkle that marks the upper edge of the tarsus. Then the lid must not be dragged over this point, but while it is pressed lightly down and out, the edge of the lid is drawn down, out and then up, so that it and the pencil point rotate around one another. Foreign bodies lying on the conjunctiva of the ball may be wiped off with the cotton-tipped application.

Foreign bodies in the conjunctiva of the tarsus must be picked out with the spud or sharp needle in the same way that those stuck in the cornea are removed. Small foreign bodies in the conjunctiva of the globe cannot be picked off, because their irregularities caught in the web-like tissue make this, as a rule, impossible. The body should be seized with small forceps, drawn well away from the ball and the retaining tissue cut through close to it by a snip of the scissors. No sutures are required to close the resulting gap unless it be extraordinarily large. The conjunctiva is highly elastic and spread evenly over the globe, so that, though it may look larger than we anticipated, the hole in its continuity can do nothing but heal. By reason of its vascularity, wound infection is very rare. If we doubt, however, it is easy to put in a few interrupted stitches of fine silk. We should be careful to catch up the conjunctiva only, undermine it freely with the points of the closed scissors, place our stitches not more than 1 mm. from the cut edge and tie them tightly as the strength of the thread permits. In this way they will cut out themselves, without further trouble, in three or four days. Black silk is used because it is more readily seen in case the sutures have to be removed.

Large foreign bodies which lie under the conjunctiva are plainly visible through it. They must be cut down upon, seized with forceps by the end and drawn out while with scissors we trim away closely the clinging tissue. If the body has penetrated the sclerotic coat, or passed along side of the eyeball into the orbit, it will cease to be visible beyond the point of penetration. When the injury is recent, bodies which have entered the orbit should be drawn out, the greatest care being taken to assure the removal of every particle. A probe should be used to keep the mouth of the track open so that discharge and healing from the bottom may be favored. If, on the contrary, the injury is two or three days, or more, old, the case had best be put in the hands of someone of experience in dealing with such conditions. The chapter on foreign bodies in the orbit is a surprising one. Cases are recorded in which bodies of large size entered the orbit and remained there for months without causing any marked symptoms. For instance, there is a picture in Soelberg Wells' text book of part of a hat pin 3 and 3/10 inches long which remained in the orbit at least 52 weeks without the patient's being aware of it. In Noyes' book is the facsimile of the breech pin of a gun about 4½ inches long, thick and heavy in proportion, which lay in the orbit, its end protruding through the frontal plate into the anterior lobe of the brain, for five months without the victim being aware of what had become of it. I saw this case myself after the body had been extracted, before the boys' death, which took place slowly from abscess of the brain.

When the sclerotic has been opened, if the eye ball has been entered and extensively disorganized, or if the penetration involves the ciliary region, enucleation is the only proper course. Otherwise, we may close the scleral wound by silk sutures through the conjunctiva. Beginning half a centimetre beyond one end of the wound, we catch up the membrane and draw it away from the ball and start a whipped over or in and out continuous suture, which in the region of the cut is placed about 2 mm. from the cut edge of the conjunctiva and is carried 4 or 5 mm. again beyond the other end of the wound in the sclerotic. The silk used should not be too fine and the stitches must be placed well away from the edge of the cut conjunctiva, because the sclera heals none too quickly and we wish our suture to hold until we think it safe to remove it, say five to seven days. I have used this method in wounds of the sclera certainly a centimetre long with satisfaction. If we try to place our stitches in the sclerotic itself, we are sure to squeeze out more or less vitreous, for the membrane is tough and hard to suture and we are certain to pull the lips of the wound about.

Now, a few words about antisepsis and anesthesia. It should go without saying that from the removal of the smallest foreign body resting on the cornea, to the extraction of one that has penetrated the orbit, surgical cleanliness is necessary. We know that we cannot render our hands sterile and rubber gloves are impossible impediments in eye work. So we wash them well, and if there is any chance of having to touch the field of operation, soak them in a bichloride solution. Otherwise, we may soil the cotton we roll upon our applicator, or if our instruments chance to be moist, contaminate a droplet that rolls down one of them into the eye. The instruments must, of course, be sterilized. Boiling for five minutes in water to which a little bicarbonate of soda has been added is the surest as well as the easiest way to accomplish this. If for any reason we cannot boil them, soaking in strong alcohol for ten minutes or more, followed by drawing them under strong pressure through a pledget of cotton wet with the fluid, is probably the best substitute. As to the eye, we know it cannot be made sterile and it is highly important not to irritate it before any operation by vain attempts. The method followed for many years in our clinic is to cleanse by repeated instillations of fresh 10% solutions of argyrol as repeatedly washed out with sterile normal salt solution or freshly made borax-boracic-camphor water wash we call "B. and C." This, judging from the results, kills or attenuates and inhibits any pathogenic organisms. At the last meeting of the American Ophthalmological Society, a report by Dr. ———— Lancaster, of ————, Pennsylvania, confirmed those of ? ? that argyrol is an efficient antiseptic, a fact, as I have said to you before, of which clinical observation has long since convinced me. I felt sure that in time it would be demonstrated in the laboratory. Fresh argyrol, in freshly made solution of a strength not greater than 15%, used not longer than two weeks at a time, does not smart or iritate the eye. Its diffusibility is remarkable; it penetrates everywhere; it dislodges old secretions from the lachrymal sac and takes their place; it clots and stains every roll, shred and speck of mucus making them plainly visible and thus renders yeoman service in cleansing the conjunctival sac.

We who had to operate in the days before antisepsis, well know the wonderful resistance of the human eye to infection. All this painstaking is but an effort to save the hundredth eye. Workmen with dirty hands and still worse penknives, or other unclean instruments, will continue to pick foreign bodies from one another's eyes, to rub the injured organ with filthy handkerchiefs, and in most cases escape the natural consequences. But every now and then, even after a clean removal, infection occurs. There are few things more distressing than to see an eye lost in this way by a man dependent on his daily labor for his daily bread. We have a rule, therefore, in the clinic of the Eye, Ear, Nose and Throat Hospital that after removal of a foreign body from the cornea and thorough cleansing, the eye must be sealed up by a small cotton pad between two layers of gauze cemented to the brow and rim of the orbit with collodion—the Blanco dressing. This is removed every day and renewed after cleansing the eye until the abrasion ceases to stain with fluorescine. When the abrasion is slight and the patient cleanly and intelligent, we order the argyrol solution to be instilled every hour until redness and the rough sensation on winking have diappeared. Bathing the closed eye frequently with hot—not warm—water favors this and gives comfort.

In the days before cocaine removal of a foreign body was painful, often difficult, and required much more skill than now. A drop or two of a 4 per cent solution of this miracle-working drug in the eye and pain is abolished. It is best to instill a drop at intervals of about two minutes two or three times before the operation, and if this is prolonged, at intervals during its performance. Must I add that the solution should be prepared with distilled water, or, if not fresh, should have been well sealed and put away?

Finally, I should say something about finding a foreign body in an eye. Perhaps this should have come first, for "first catch your hare" is a time-honored recipe for a ragout. There are two adjuvants to this search for "matter out of place" which are quite indispensable to perfect assurance that our pursuit has not been eluded in any case. One, the Berger binocular loupe and its accessory condensing lens, the other the 5% solution of fluorescine prepared by Merck. They are so useful and so inexpensive that I am surprised they are not to be found in the office of every physician who lives more than a mile away from a professed oculist. For the binocular magnifier greatly increases the information we derive from the examination of any small lesion; the fluorescine solution saves us from a mistake that may seldom occur, it is true, but is most discomforting when it does. Foreign bodies on the conjunctiva are, as a rule, easily seen. Seldom on the conjunctiva of the globe, they are, when so situated, usually conspicuous by contrast with the white sclera and by some little redness about their site. Not infrequently, on drawing down the lower lid, we find the body fallen into the lower cul-de-sac. But their most common lodgment is, as I have stated, under the upper lid in the minute sulcus just within its free edge. Small particles on the cornea are, on the contrary, often hard to see. They should, if possible, be first looked for by good daylight. With the Berger loupe on our head we concentrate the light on the surface of the cornea with the condensing lens held at its focal distance, commonly three or four inches, from that membrane. By gentle movements of the lens we play the light little by little over the whole corneal surface. Sometimes the particle is so tiny that it cannot be seen itself and yet it is revealed by the break it causes in the sheen of the light condensed on the corneal surface. Just as you have all seen an otherwise imperceptible twig projecting from the smooth surface of a pond shown by the disturbance of the sunlight water mirror. Should this fail us we resort to our fluorescine. A drop of the solution is instilled and allowed to soak in for three or four minutes while the lids are kept closed. Then all traces of the staining fluid are washed away by repeated flushings with the B. and C. solution. Some patience is required, for the intensity and diffusibility of the fluorescine is prodigious. Now, the presence of the body is revealed by a very fine bright green ring surrounding it. Or it may be that the body has already become detached and has been swept away by the tears and the abrasion at its former site is shown by a small spot of an intense green color. At times all our efforts to find the offender by daylight are vain. We must then continue the search in a darkened room with the aid of a good source of artificial light. This can be concentrated into a more intense cone on the surface we are examining. Indeed, the search for a foreign body must never be abandoned until we have made use of this mode of examination by oblique—artificial—light. In a medico-legal case our testimony might be discredited if we failed to do so. Perhaps the most puzzling foreign bodies are the thin, translucent inner hulls of small grains, wheat, rye or rice and the wing-cases of small insects. These find a lodgment in the sulcus made by the juncture of the cornea and the sclerotic with the convexity outward. The air in their concavity becomes exhausted and they are held tightly to the surface on which they rest. When after some hours they become coated with a little mucus, it often becomes almost impossible to distinguish them from original corneal ulcers and we must touch and move them with the cotton-tipped probe to tell.

DISCUSSION.

Dr. T. J. Dimitry, New Orleans: We have listened to an instructive and enlightening paper that could only come from one of mature years. It is instructive to the layman, and it has impressed you with the fact that we as eye men at least have found one condition that is truly our own, the "removal of foreign bodies from the cornea and from the conjunctiva." The thing that impresses me is that a foreign body on the cornea should be treated by a method in which we wrap a little piece of cotton around a probe or a toothpick and expect to remove the foreign body by that means.

Very great is the danger when you use a cotton probe, unless you use it properly and correctly, as described by Dr. Bruns; you will find you are carrying the foreign body deeper and deeper into the cornea, hence it is very essential that some symtematized plan be used to accomplish real results. When once a foreign body has been removed, and particularly if you have used an instrument in removing it, you always leave an open scar. You have left an area uncovered by epithelium.

After a foreign body has gotten into the eye, the first thing that is usually done by the patient is to take hold of the lid and rub. As he rubs, he rubs the foreign body deeper into the cornea, hence it is buried in the epithelial layer.

After you have removed the foreign body, and realizing that you have a scar there, it is well not to use the albuminous silver preparations, particularly argyrol, because argyrol stains permanently denuded areas to the injury of the eye. If you read the literature on this subject, you will see it scattered throughout the country where men are promiscuously using argyrol, which stains the conjunctiva and stains the cornea. Only within the last week I saw a case where the conjunctiva was horribly stained in a young lady, and that young lady asked if there was no recourse in this case to prevent such a disfigurement as is produced by the silver preparation. I throw that out as a warning to you, and although argyrol may be antiseptic, and it has diffusibility, and it will coagulate albuminous substances, I warn you that it stains the cornea, it stains the conjunctiva, and there is always that possible danger lurking in your mind.

Dr. L. E. Meyer, Thibodaux: I wish to compliment my old professor, Dr. Bruns, upon his able, interesting and instructive paper. I have listened to it with deep interest. It brought me back to thirty-three years ago when I was a student under the now honored Dr. H. D. Bruns at the Charity Hospital.

The question of removal of foreign bodies from the eye is a very important one, especially to the country physician. The knowledge of the country physician in diseases pertaining to the eye is, as a rule, very limited, and that is one of the causes that brings so many patients to country doctors—foreign bodies embedded principally in the cornea and in the conjunctiva.

The method of removing foreign bodies, as suggested by my friend Dr. Bruns, is the one that should be practiced and adopted by every practitioner. It is the only safe and sane method of removing foreign bodies. The one essential thing, before attempting any operation as delicate as the removal of a foreign body from the eye, is that you must remember the cornea is the most sensitive part of the body. The first thing to do, then, is to be sure that the cornea is anesthetized so that the patient will not suffer. The next requisite is that you should have absolute illumination, and the method I have adopted and have used I will endeavor to explain to you.

I place the patient in a chair seated; directly above his head is an electric light. I place a head mirror on my head, and standing in front of the patient with his head held backward, loosen his collar so as not to choke him; then you have the reflection of the electric light in the head mirror thrown directly on the cornea. In this way you have a fine, clear light. In order to increase the advantage and get a perfect light, you can use a magnifying glass and put it in front of the patient's forehead, and the particle, no matter how small it may be, if it be not greater than the point of a pin, will appear large in that magnifying light.

As to the method of extraction, when you fail by using a pledget of cotton, you have to resort to an instrument. The instrument I generally use is the point of an iridectomy knife. I will admit you have to have a very steady hand, but by a little practice and being careful, the foreign body can be easily removed without danger to the patient by that method.

Dr. M. Feingold, New Orleans: I would like to bring out a few points in approval and emphasis of the things told by Dr. Bruns so ably for the guidance of the general practitioner. He emphasized the point that after a foreign body has been removed a bandage should be put on. You will find in a good many textbooks the statement that after a foreign body has been removed it is advisable to order a wash or drops for the use of the patient. We have, after a foreign body has been removed, a denuded surface in the cornea, a tissue which is poorly nourished, and the recommending of washes or drops gives the patient a chance for introducing dirt into his eye. I would emphatically say, seal the eye and do not by any means use any drugs, any solutions which are intended to keep the eye aseptic or kill any bacteria that may be in the conjunctival sac. Let us remember that a superficial wound of the cornea will heal extremely quickly; that the epithelium at the edge of the wound in the cornea proliferates quickly, and, as has been shown by experiments, covers a defect in the cornea within a very short time. For that reason, bandaging or occluding the eye and giving the epithelium a chance to cover the defects is the only logical treatment. The moment the epithelium covers the cornea, that moment all danger of infection has ceased. Of course, opinions may differ as to the exact way of protecting the eye and keeping it closed so as to give the epithelium the chance to regenerate. Dr. Bruns accomplishes this purpose by an occlusive bandage. Some of us do the thing in a little different way, but it all amounts to the same thing: we see that the eye is put at rest, that the eye is protected, that the epithelium has a chance to regenerate and to cover the defect quickly, thus preventing infection. In our clinic the patient is instructed to keep his eye closed on his way home and to take a good long nap on reaching there; during that time the eye is at rest, the epithelium covers the defect, and he wakes up without any further discomfort.

Another thing I should like to speak about is the group of cases that have been handled by the fellow-workers in the shop. After one or more attempts have been made by fellow-workers to remove the foreign body from the eye with the end of a match, a pocket knife or toothpick, and after repeated failure, the patient comes to the clinic for treatment. Under these conditions we have a cornea which has been more or less badly treated; the wound has been enlarged to a greater extent than it should be, and we must figure that there is a certain amount of contamination of the conjunctival sac. We know what repeated handling does in cases of obstetrics, and the same thing applies to foreign bodies in the cornea and conjunctiva. Repeated handling increases the danger of infection, and for that reason we have to look at the cases in which attempts have been made to remove the foreign body as offering a much more serious prognosis.

Dr. T. C. Moody, DeRidder: I live in an industrial center where there is a large sawmill, and we have lots of cases of foreign bodies in the eye. I had one recently, which was a very slight injury of the cornea, but which resulted in enucleation of the eye. I tried to instruct these doctors about the removal of these foreign bodies. The trouble is they will not take time. They will use any kind of instrument. They do not use any sterilization whatever. As Dr. Feingold has said, they use all kinds of drops and salves in the eye.

I appreciate Dr. Bruns' paper very much. My practice has been the same as his. I always put on a bandage, no matter how slight the injury. Some of these patients object to a bandage, but I tell them that unless they allow me to put on a bandage they must assume the responsibility later if trouble occurs. They wear this bandage for twenty-four hours if I cannot see them again, and I usually write to the doctor to remove the bandage the next morning and instruct the patient to come back if there is any infection.

Dr. A. L. Whitmire, New Orleans: I believe the Graefe knife is the best instrument for use in removing foreign bodies from the cornea. It is not an instrument for the general practitioner to use unless he has studied the anatomy of the cornea. I have been following the method of Starr, of Buffalo, who has been undermining the conjunctiva and making a flap of same for perforations and ulcers of the cornea as though he were doing an enucleation. If the ulcer is extensive or the puncture is near the center, he undermines the conjunctiva entirely around the limbus. He closes the incision with a pursestring suture. I have followed this method in 25 cases. I have used it in one case of gonorrheal ulcer which involved the lower half of the cornea. It was bulging quite a bit, at least 3 diopters. The patient had no discomfort, and five days thereafter it was perfectly clean. She has had no trouble since. Where pocket knives or hat pins are stuck in the danger zone I have had good results by that method. The wounds can be dried after first cocainizing and touching with Lugol's solution and the flap brought over. There is no pain attending the operation, and it looks as if you had done an enucleation or a fat implantation, but the cornea is entirely covered. You can draw the pursestring suture close enough so that you cannot see any cornea. It will recede and you cannot tell in six months time that the eye has been operated on.

Dr. H. D. Bruns, New Orleans (Closing): This is evidently an interesting subject. Of course, there was a great deal I had to say in my paper that the rules of the Society did not allow me to go into. There is one thing that I want to say, however, because I am determined that a friend that has served me so well and faithfully for a long time shall not suffer under any implication that I can remove. There is no method of treatment which, if improperly and wrongly used, wont bring about bad results. You can make a man's eye sore by dropping into it any solution for an indefinite length of time. I have been using argyrol since it first came out. I long experimented with it and have used it up to this time. I have seen but two cases of staining of the cornea as a result of its use, and both were so slight that the patients were not aware of it. Please note what I said in my paper: If it is used in a fresh solution not stronger than 15 per cent, and not longer than two weeks, it is non-irritating. That is perfectly true. I do not believe any one will have staining of the cornea who does not use argyrol stronger than 15% and longer than two weeks.

Almost the worst case I ever had to manage was one in which cocaine had been unlimitedly used. It was a horrible eye, and it was a very difficult thing to decide what we ought to do to coax it back to health; yet everybody uses cocaine. It is the abuse, and not the use, of remedies that brings about trouble.

THE TREATMENT OF EMPYEMA.*

By F. W. PARHAM, M. D., New Orleans.

Empyema has been known and treated for twenty-six centuries. Hippocrates taught much as to etiology, symptomatology, prognosis and treatment that is fundamental to our present day conceptions (1). Hippocrates recommended examination for fluid in the chest after fifteen days and gave specific directions for locating and making the drainage opening. No substantial progress was had in diagnosis until Angenbrugger's description of percussion in 1761.

Hedblom remarks that the literature of the first eight decades of the nineteenth century is full of discordant notes with regard to treatment, and says that Dumont again in 1825 sounded a pessimistic note, maintaining the possibility of cure by spontaneous absorption, by thickening of the pleura, by sclerosis, by absorption by way of the urine and bowels or by absorption into the blood. Faure reported in 1834 to the Academy of Medicine in Paris eight cases in which operation had been performed, two cured, all others improved, but many of the profession at that time disapproved of these methods. Of fifty patients treated by Dupuytren only four recovered, and when this Napoleon of surgery himself later developed empyema he refused operation, saying he would rather die by the hand of God than by the hand of man.

In searching out the history of the management of empyema, one wonders, when he notes the vicissitudes through which its treatment has passed, how methods were followed for a time, then rejected and later on taken up and lauded again. For instance, Colson, in 1836, stated the use of syringes, cannulas and other aspirating devices employed by Dionis, Anel, Scultetus, Bruer and others, had fallen into disfavor. The work of Bowditch in 1852 again brought aspiration into vogue. Yet Walton Martin at the last meeting of the American Surgical Association in 1920, says: "Statistics show, in fact, that more chronic empyemata result from continuous puncture aspiration drainage than from any form of treatment except repeated aspiration." We shall take up this question later on. Most of the procedures now recommended have been used many years ago and discarded. For example, Aupepin (1), in 1810, described a new technic for performing thoracotomy by making the opening in the skin and intercostal tissue at slightly different levels; W. R. Morrison, of Boston, recently reported a successful case in a child with whooping cough thus treated; (2), commending a valve thus formed as more efficient than any mechanical valve. Up to the beginning of the world war the management of empyema had crystallized into almost routine methods of operating for the liberation of pus when found with the exploring needle. The pre-war experience was mostly with pneumococcal empyema, which usually came on after a pneumonia had subsided and only was discovered by a routine examination called for by a recrudescence of fever and recurring respiratory embarrassment.. Here already adhesions had formed and the frank pus was well walled off.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

The classical maxim, *ubi pus ibi evacua,* was the slogan of the surgeon.

It occurred to me, when I set myself the task of writing this paper, that it might be interesting to review this experience and deduce from it some useful lessons for our guidance in the future.

When, on April 6, 1917, the President declared a state of war with Germany, we were found woefully unprepared for the struggle. Our army was inadequate in numbers and equipment, our medical service inefficient. But the efforts of our government and people bore fruit rapidly, and by the fall of the year 1917, 32 military camps were practically ready for the reception of the young men sent up by the Examining

Boards for military service. This concentration in camp of the flower of our young men afforded an opportunity for the study of disease never offered before under such advantageous conditions. When the medical history of this war now being written by the medical services of the government is finally published we shall have a record of achievement invaluable for the coming generations. There will be recorded most important changes in our conception of many disease processes. For example, many of our notions have been modified regarding empyema. As Moschcowitz expresses it in the Mütter lecture (3), "For years the only facts worth knowing about empyema were that it followed pneumonia and that its treatment consisted in the simple formula, 'incision and drainage.' There was nothing obscure. The pathology and diagnosis were simple, the operation even more simple, so that for decades empyema seemed to offer no opportunity for more intensive investigation."

We all remained in this state of self-satisfied complacency until rudely awakened by the early experiences of the war camps. We should have been warned, for even such a well-conducted hospital as Mt. Sinai in New York had shown for ten years previous to 1914 a mortality of 28 per cent. And, as Moschcowitz remarks, this was not an unusual experience in civil hospitals before the war (3).

So alarming had the mortality become in the fall of 1917 that the Surgeon General appointed an Empyema Commission to investigate and make a report with recommendations. The justification for this was clearly set forth in a report made by Major Evarts A. Graham to the Surgeon-General, compiled from replies made in answer to a questionnaire sent to the principal Base and General Hospitals (3). The average mortality reported from 25 camps was 30.2%. In some it was much higher. At Camp Funston, in 85 cases, it was 85%. At Camp Green, in 92 cases, 53.2% ; at Doniphan, 57% ; at Wheeler, 65%. Dr. Graham says: "Possible explanation of the striking differences in mortality reported from various camps in the empyema cases are to be found: (1) In the fact that there has been a marked disagreement concerning what cases should be considered as empyema, and (2), in the method of treatment employed. This explanation has much force. Graham (4), quoting from Stone (5), shows the varying mortality of the three series:

First series: Early operation (Oct. 20, 1917, to Jan. 21, 1918), 85 cases, 61.2%.

Second series: Early aspirations and late operations (Jan. 12 to Aug. 10, 1918), 96 cases, 15.6%.

Third series: Early aspirations and late operations (Oct. 18, 1918, to Feb. 14, 1919, 94 cases, 9.4%.

This is the conclusion of the Empyema Commission, which at Camp Lee reduced its mortality to 4.3% by a similar change in the method of treatment. Graham and the Commission admit a difference in virulence may explain the varying mortality in different camps at different seasons. The Commission, however, felt that the chief factor was the method of treatment, and Graham expresses the view that, "as a result of the experience with the Army, there exists now in the United States an almost unanimous feeling that the creation of an open pneumothorax during the acute pneumonic stage of an empyema should be scrupulously avoided."(4). That the influence of virulence in determining the mortality was not suffciently regarded in drawing conclusions as to the results of treatment in the different periods is shown by the experience of Hamburger and Mayers in Camp Zachary Taylor. The virulence was such that "the extremely rapid development of the empyemas, often well within 24 hours, was demonstrated repeatedly by fluoroscopic and roentgenographic examination" (6).

Death in many cases was no doubt hastened by the surgeon, but these were often cases that would have died if let alone. It was not the knife that killed them, but the toxic condition, which operation could not relieve and only aggravated (10).

In considering the possibilities of treatment all features of a case must be considered.

E. K. Dunham showed some charts at the meeting of the American Surgical Association last year, presenting a survey of the earlier and critical stage of empyema in two or three of the military cantonments. Some of these charts give graphically the more important findings in 149 autopsies. Pericarditis, chiefly suppurative, was present in 65 cases; bilateral pneumonia in 59; empyema or effusion on the opposite side, in 49; pulmonary abscess or gangrene in 22, and mediastinal abscess in

17, were some of the intrathoracic complicating infections. Some of the extrathoracic infections were peritonitis, in 22 cases; erysipelas, in 6; otitis media, in 4; arthritis or abscess, in soft parts, in 9; 45 died in the first three days in hospital, 55 from the 4th to 14th, and 49 from the 15th to 114th day. There were only 15 days in which autopsy failed to reveal associated infection of serious character (8).

These charts, said Dunham, emphasize the importance of not focussing the mind too strongly upon the obvious empyema. This loses significance when compared with the gravity of the coincident infections elsewhere. The condition, as Hamburger remarked as a result of his experience at Camp Zachary Taylor (6), was really one of streptococcus septicemia, with the empyema merely one of its manifestations.

Indeed, if these camp experiences have taught us nothing more, they have emphasized the distinctive differences of the streptococcal and pneumococcal pneumonias and empyemas. Many cases, as just indicated, were hopeless from the beginning; some undoubtedly hung in the balance, the scale turning favorably for some if left undisturbed, a few recovering because of timely and judicious surgical assistance. Good judgment often depends upon a knowledge of the underlying causes of phenomena, and much of our success in practice is based upon the work of the careful experimental investigator. The admirable experimental work of Graham and Bell has furnished a lucid explanation of the danger of early operation in empyema. Their articles, embodying their researches are well worth study (9).

These experiments show that a pneumothorax on one side compromises by pressure equally the other side, since, at variance with the common teaching, the mediastinal partition is not fixed, but quite movable, unless made rigid by inflammatory infiltration. Consequently, it is not true, as generally believed, that the sound lung can undertake the work of both. If, therefore, empyema exists on one side, we must be sure that the other lung or pleural cavity is not also involved. In empyema resulting from pneumonia, due especially to the streptococcus hemolyticus, not only is the pleura on the one side more extensively and severely implicated, but many of the bronchioles are plugged with exudate in addition to the air cells thrown out of commission. Now, if an opening is made in either side, the resulting pneumothorax, much more effective, because, adhesions being not yet formed and the mediastinum being still movable, both lungs become compressed, the already diminished vital respiratory capacity is still further lessened, and, when this becomes reduced to tidal air capacity, fatal asphyxia ends the painful scene. The normal lung in a normal individual can stand a much greater reduction of vital capacity, because the compensatory respiratory mechanism may be brought into play. It must be remembered, too, that the condition of toxemia creates an increased demand for oxygen, so that three factors, intra-pulmonary involvement, intra-pleural pressure and toxemia, urge waiting until the pneumonic process has subsided and the pleural exudate has been localized by the formation of adhesions and the mediastinal partition has been fixed by infiltration

The danger is not so great with the pneumococcal form, as with the streptococcal, because the process is usually more insidious and the empyema is often not discerned until the pneumonia has subsided.

The objects of treatment in empyema are twofold: To prevent mortality; to prevent chronicity.

The division into stages, suggested by Moschcowitz, is excellent: The Formative Stage, when the discharge is sero-fibrinous or sero-purulent; the Acute Stage, when true pus has formed and adhesions have shut off the general pleural cavity and diminished the mobility of the mediastinal septum, and when the pneumonic process has now, too, largely subsided. Failure to stop the process in this stage gives rise to a chronic empyema. In the first stage only a compromised respiration from the pressure of the fluid, which sometimes is poured out in enormous quantities within a few hours, will call for relief, and then only by aspiration, repeated if necessary every 12 to 24 hours. This alone is sometimes curative. In three cases at Camp Lee operation was unnecessary, because the fluid ceased accumulating after repeated aspirations. Stone at Camp Funston reports 35 cases out of 310 cured by aspiration alone. Moschcowitz and others also report similar cases. I recall here the statement quoted from Walton Martin in the early part of this paper, that more chronic empyemata result from repeated aspiration than from any other form of treatment. It should, of course, only be used to tide the patient over a dangerous period, when respiration is seriously interfered with by fluid pressure. Later, when the pus has become frank, operative treatment may be instituted with advantage, but it is questionable whether the open operation is best in many cases. Certainly, in many pneumococcal cases, it is justifiable, and indeed advisable, in order to obtain and maintain effective drainage.

But I feel sure that Müller in his excellent review of empyema literature in Progressive Medicine for 1920, is too dogmatic and severe. Referring to the methods of suction drainage mentioned in Schiller's article in 1904 (10), he asks "Why did these methods fall into the oblivion of discarded apparatus and methods?" and attempts to answer by quoting from Hartwell, "Gradually, through the constant teaching of thinking masters, this disease has been handled along sound lines of therapeutic technic, founded on a full comprehension of its pathology." Hartwell (11) says: "If the experiences of the past two years are made the basis of the standard treatment of empyema under conditions of pulmonary disease less abnormal than those existing during this trial, a distinct step backward will have been taken." In this he does not agree with some of the authorities who enjoyed abundant opportunities for the treatment of the disease by these suction drainage methods. Moschcowitz, as a result of his experience upon the Empyema Commission at Camp Lee, at General Hospital No. 12, Biltmore, N. C., as Chief of Service at Camp McLellan, and later as consultant in the Surgeon General's office, had his views profoundly altered regarding the treatment of empyema, and strongly advocated a method of suction drainage, preferring a simple thoracotomy to resection, but making a larger opening than that practiced by some others. He contended that empyema should have no mortality in uncomplicated cases. Allen B. Kanavel (12), who had charge of the empyema work during a part of the war, endorses the method of suction drainage, saying: "The establishment of a constant negative pressure offers a much better chance of success, for, if the pressure is maintained, the lung is constantly pulled out until it is restored to its normal position or until adhesions between the parietal and visceral pleura permit the obliteration of the cavity." He thinks aspiration with repeated puncture is not without danger, owing to the difficulty of avoiding secondary infection. The Empyema Commission, while recommending aspiration repeated as required, at intervals of from one to six days, at first commended the continuous suction drainage after the fluid had become frankly purulent, and illustrates its report with the apparatus used. Stone at Camp Funston improved his statistics by resorting to this plan of treatment. Many others carried out the same technic and numerous apparatus were devised to overcome the difficulties of maintaining air-tight closure of the drainage opening, which is the one serious objection to the method. Walton Martin read an excellent paper before the last meeting of the American Surgical Association (13), in which he contends improper treatment is chiefly responsible for the development of chronic empyema.'' ''I feel sure,'' he says, ''that in the majority of cases there has been a failure to appreciate the fundamental principle involved in treating an infected cavity; that an absolutely free external passage for the exudate must be provided as long as infection is present; that scrupulous cleanliness must be observed in the after-care; that one must always be on the lookout for the possibility of secondary loculi and foci of infection and shut off portions of the drainage tract.''

To accomplish these purposes the advocates of resection insist that trochar suction methods are inadequate and that a free opening is necessary. There are two sides to this matter. Even Schiller, writing in 1904 (10), while deprecating suction methods, gives one of the strongest proofs of the efficiency of suction drainage in emptying the pleural cavity. He injected a strong solution of strychnine into the pleural cavity of a dog and then applied the suction apparatus of Perthes. The solution was drawn out so thoroughly that no symptoms of poisoning supervened. Another dog, injected in a similar manner, succumbed in spite of the fact that a free drainage opening was made by resection.

The method of siphon drainage was introduced over thirty years ago by Bülau, improved afterwards by Perthes, who substituted the water pump for producing negative pressure. Many modifications of this method aiming to simplify its application have been devised. These are briefly enumerated here with the references to the articles describing them

Bülau's Method: First advocated by him at the Medical Congress of Vienna in 1890. One of the trochar-suction methods. Lincoln Davis, **Annals of Surgery,** Sept. 1920.

Perthes' Method: Improved Bülau apparatus by applying suction with a water pump (hydrant). Schiller, **N. Y. Med. J.,** June 18, 1904.

McGlannan: Bottle suction apparatus with Brewer tube.

Rosenthal: Trochar thoracotomy. Small, thin collapsible tube over distal end, 24-inch drain tube. Ochsner Year Book of Surgery, 1918. Similar to Ransohoff's method.

New Wight—Harloe Empyema shield and closed method of applying it. **S. G. & O.,** Jan., 1920, p. 94.

Felsen, J.: Simple siphonage apparatus. Ochsner Year Book of Surgery, 1918, with illustrations.

Mozingo's Closed Method Trochar Cannula. J. A. M. A. 71; 2062, Dec. 21, 1918. Used by him at Walter Reid and other hospitals.

Diederich: Trochar Cannula. Employed by him at Camp Pike. Commended by McKenna and Kavanel. **S. G. & O.,** 28; 362, April 19, and **J. A. M. A.** Aug. 31, 1918, 743.

Caples, B. K.: Suction drainage; rather complicated, but apparently very efficient. **S. G. & O.,** 29; 417, Oct. 1919.

Philips' Apparatus: Commanded by Langman and Mix after personal observation. **J. A. M. A.,** 72; 1274, May 3, 1919.

Moschcowitz, A.: A large tube through intercostal incision, air-tight closure, combined suction and installation. Similar to method of Empyema Commission. **Am. J. Med. Sciences,** May, 1920, 682.

Morrison:—Valve drainage by flap of tissue covering the end of drainage tube. **Boston Med. & S. J.,** 182; 366, April 8, 1920.

Morelli's Method: A pneumatic, dumb-bell shaped, obturator, with drainage tube running through it, designed to insure against leakage; combined with three bottle suction, controlled by manometer. Recommended highly by Bastiannelli and Lincoln Davis. **Annals of Surgery,** Sept., 1920.

I feel that the arguments against this suction method are not convincing and that the advantages of employing an efficient method are so obvious that only brief argument is necessary.

Suction establishes negative pressure aiding in the lung expansion and thereby forcing out the infected exudate. Employed in conjunction with the coincident introduction of sterile air or fluid, the emptying may be quite thorough, and all this without running the danger of an open pneumothorax.

The introduction of the neutral solution of sodium hypochlorite has established itself as one of the conspicuous accomplishments of the war in the treatment of empyema. Beginning with the demonstrations at the Rockefeller War Demonstration Hospital, it became rapidly adopted in most of the camps and showed itself one of the most potential agents in rapidly subduing the acute infection and preventing the development of chronic empyema. A few disapproving voices have been heard, such as that of Babcock, who testifies that when he left Camp

McPherson there were some 80 cases still draining after a year, although the Carrel-Dakin method had been thoroughly tried. Dr. Duncan Eve (14) seems to have formed a decided prejudice against it, although he confesses to have had a very limited experience with the method. He adopted the opinion of Major W. T. Dodge, Chief of the Surgical Service at Camp Sherman, whom he quotes at length, to prove the futility and, indeed, harmfulness of it in the pleural cavity. A singular statement is that all of ten patients treated with Dakin and formaldehyde solution "were found after several months to have partially collapsed lungs and cavities of considerable size." Contrast this with the statement of Wilensky (15). The case was that of a man with persisting sinus after fifteen months. Foul pus discharged, and the X-ray picture showed "homogeneous shadows covering the whole of the involved side." Radical operation was determined upon. An enormous cavity was discovered reaching from the very top to the very bottom of the thorax. Owing to the large amount of foul pus extensive, Schede thoracoplasty was abandoned until the suppuration could be controlled. The large wound was left wide open and dressed after the Carrel-Dakin technic. In six months the wound had contracted and closed down to a very narrow slit. As six months seemed unreasonably long for a sinus to persist, he determined to carry out the original intention and do the Schede. He found nothing but a narrow gutter and was convinced that if he had waited a little longer the entire wound would have closed. Dr. Dodge gives a long letter from Major F. C. Warnhuis, Chief at Base Hospital No. 99, Hyvres-Var, France, but formerly of Camp Sherman. He corroborates Dodge by referring to sixteen cases just admitted to his hospital, operated on some weeks previously; the histories showed that the eleven unhealed cases had been treated with Dakin, whereas five healed cases had had none. He hoped that Major Dodge would "comment strongly on the misuse of Dakin's solution in empyema." He considered it a crime to use it.

After giving this broadside, my friend, Dr. Eve, quotes from Dr. John H. Gibbon (14) as follows: "Probably the greatest improvement in the treatment of infections of the pleura we owe to Depage, who suggested the sterilization of the pleural cavity by constant irrigation with Dakin's solution."

And yet, Dodge, after a trial of it in eight cases, insists that "the long-established principles of surgery as evolved by many years of experience in civil life and enunciated in practically every text-book on surgery as the proper treatment of empyema, has not been shaken from its foundation by any of the fads and fancies evolved during the war period." Dunbar Newell, in discussing Dr. Eve's paper, gave the most convincing testimony as to its value at Camp Beauregard in Louisiana.

Quite positive is the testimony of Moschcowitz: "It is marvelous to see the effect of a properly-carried out treatment. All pus and odor disappear as if by magic. I have literally dressed one hundred patients and in all the patients combined not half a teaspoonful of pus was found; in fact, in some cases it was difficult to obtain enough secretions to make a proper culture" (3).

Its undoubted effect is shown as well in cases of chronic empyema. While it acts usually by gradually dissolving the exudate, it sometimes loosens large masses of organized inflammatory tissue, as instance the case reported by Evarts Graham (9b). So marked is its effect that its careful use in even old empyemata may obviate the necessity of the formidable decorticating operations, heretofore necessary in obdurate cases. Objection has been urged that in many cases, if empyema is really due, as Moschcowitz has argued, to the rupture of subpleural abscesses, its use will be detrimental owing to the opening up of bronchial tubes. Its irritating effect can, however, be obviated by putting the patient in proper position and using it in very small quantities at first. Very soon larger quantities will be tolerated. Properly carried out the treatment will succeed in rapidly clearing up the adhesions, and in conjunction with the establishment of negative pressure, the lung will expand and the opening will close spontaneously when the infection is destroyed. When the method fails in uncomplicated cases, it is very likely owing to one of the following circumstances:

1. Lack of confidence on the part of the surgeon, due to lack of conviction of the efficiency of the treatment. Enthusiastic faith is necessary.
2. The game has not been played according to the rules. The technic must be accurate and team work is necessary.
3. The Dakin solution must be right.

When the technic has been strictly observed it may still fail for the following reasons:

1. Drainage is not sufficient. Carrel tubes must not be used as drains, they are only for instillation and must be properly placed.
2. Later, drainage must be interfered with by contraction of the drainage opening.
3. Necrotic ribs may keep up the infection in the resection cases. This is an argument in favor of simple thoracotomy.
4. Retention of foreign bodies, such as Carrel tubes, sponges, tampons, rubber dam, sequestra. (Moschcowitz.)
5. Sacculation of the original cavity.
6. Cicatricial cutting off of a portion of the sinus tract.
7. Reinfection from residual intrapulmonary or intra-pleural abscesses.
8. Pleuro-pulmonary and bronchial fistulae.

The evidence properly weighed, then, seems to justify us in accepting the Carrel-Dakin method as one of the surgical demonstrations of the war, not only for wounds in general, but for infection of the pleura as well. So great is its value in acute empyema, that I should hesitate to recommend the radical procedures of Hathaway (17), Lilienthal (16), Delbet and Girode (18), and others, involving an opening sufficient to introduce the hand to clear away all adhesions, followed by cleansing and immediate closure. The Carrel-Dakin method in chronic empyema has shown itself so efficaceous that even in some old empyemas it may be so successful as to make unnecessary the chest sinking operations of Schede and Estlander, or the decortication operation of Fowler and Delorme.

The object of treatment is to obliterate the cavity, either by making the lung to expand or by dropping the chest wall in on to the lung. The first is, of course, the ideal. In most cases it can be accomplished by

1. Proper drainage.
2. By maintaining negative pressure in the pleural cavity by one of the suction drainage methods.
3. By aiding the positive pressure by blow-bottles and calisthenic exercises. Tinker and Wattenburg have shown the great value of this very graphically in a table (19).
4. By sterilization of the cavity acute or chronic with Dakin solution.
5. By checking the nitrogen loss by raising the fuel value of the daily ration of from 3000 to 5000 calories by the addition of milk, eggs, cocoa, etc., to the dietary.

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DISCUSSION.

Dr. M. Bradburn, New Orleans: The very excellent paper of Dr. Parham has covered the field thoroughly. I wish merely to emphasize the points brought out by him. One of these is that the treatment of empyema cases differs with the infecting organism. We must distinguish between the streptococcal and pneumococcal empyemata. In the latter, by the time pus is usually discovered, the acute pneumonic process has subsided, adhesions have formed, and we do not fear the danger of an open pneumothorax with an acutely inflamed lung with consequently reduced vital capacity. In the streptococcal empyemata quite a different state of affairs exists. The effusion occurs early. This frequently must be removed, not because of the toxemia it produces but because of the pressure it exerts. The acute pneumonic process exists and a greatly impaired vital respiratory capacity. No adhesions are present at an early stage and by thoracotomy we greatly jeopardize the patient's chance of recovery by superimposing an open pneumothorax upon the already existing danger of a streptococcal pneumonia, and, as stated by Dr. Parham, a streptococcal septicemia. The treatment, then, in the early, or so-called formative stage of Moschcowitz, is aspiration, on an average about four aspirations at intervals of two to six days. About 13% of these cases are cured by this method of treatment. Aspiration should be employed in the serous and seropurulent stages when the acute pneumonic process exists; open operation is distinctly contra-indicated at this time. In the purulent stage we employ thoracotomy with or without rib resection.

In reviewing the literature of the last three years the point of election for the thoracic opening seems to be about the 8th rib in the post-axillary line, or perhaps the 9th rib in the scapular line. It has been my practice to carry out the Carrel-Dakin method of treatment, inserting three or four Carrel tubes with about twenty perforations, and, in addition, one safety tube to prevent too great intra-pleural pressure from Dakin fluid. I believe that by its use the number of cases coming to the Schede or the Estlander which Tuffier speaks of as ill-advised, will be reduced. Under its use, as Dr. Parham has pointed out, it is not infrequent to be able to remove large membranous masses from the cavity. In a recent case a piece as described by the nurse as being six inches long and rather thick was removed. Unfortunately this was not saved for section. Dr. Parham cites the instance reported by Evarts Graham where such a membrane on section was shown to be organized tissue. We actually then accomplish in many instances a decortication by the use of Dakin's solution. The capacity of the cavity should be measured from time to time, and especially at the time of separation of these membranes. There is danger, I think, of breaking down adhesions at this time by too great pressure of Dakin's fluid and of injecting the solution into the lung. If this should occur it is not necessary to discontinue the use of Dakin's solution but to diminish the amount and to place the patient on the sound side during the instillation. It has been our practice to instill into the cavity only 1/2 its volume of Dakin's solution. I have not practiced the plastic closure of thoracotomy openings, but when the counts have been less than one to five for seven consecutive days I discontinue the Carrel-Dakin method of treatment and dress the external wound with a dichloramin T solution.

It has been our practice, in addition to the Carrel-Dakin method of treatment, to employ pulmonary gymnastics by the use of Wolff bottles. One word with regard to the treatment of tubercular empyemata. From the experience of Heuer I believe these cases do better under bismuth sterilization. He reports six successes out of seven treated. In the chronic stage again the Carrel-Dakin method of treatment is of value. Wattenberg, in writing of his experience at U. S. Government Hospital No. 26, at Fort Des Moines, where the Carrel-Dakin method of treatment was employed, writes that the major chest collapsing operations must have had their day. The most radical procedure to effect a cure here was the resection of two to two and one-half inches from one or two ribs.

Just one word as to the treatment of bronchial fistulae. The brochial fistulae usually close spontaneously and the expectant treatment should be carried out. The broncho-cutaneous, according to Carl Eggers, may close spontaneously. One word of caution; in closing the broncho-cutaneous opening be careful not to close such an opening if it is draining. A septic focus as an intra-pulmonary abscess may ensue.

Cases where decortication is decided upon, should, according to Tuffier, be preceded by disinfection of the cavity. He states that in this way success formerly unknown is obtained.

Dr. J. A. Danna, New Orleans: I am sorry that Dr. Parham was not able to finish his paper, because I believe the subject taken up is one of extreme importance, and a subject we have learned more about since the war than any one surgical topic.

I would like to review briefly some of the points Dr. Parham has brought out. I would like to call attention to one particular point, a thing which makes an operation for empyema dangerous in a very sick patient—namely, the sudden emptying of the chest and the creation of an acute pneumothorax.

There is a little book written by Morelle of the University of Italy, which has been translated by Lincoln Davis of Boston, that bears on the principles involved in what I am about to speak to you of, and in it you will find some original ideas about some of the suction methods we have adopted in empyema, etc. He makes one point which is the idea of Voltolini, who was the originator of artificial pneumothorax. He says there are two things that make the opening of a chest in acute empyema unsatisfactory. One is the sudden relief of the pressure on the lung. The other is that if you use an aspirator and aspirate sufficiently to pull on the lung, you create a strong negative pressure which reproduces pleural effusion at a rapid rate. So he has an aspirator which aspirates fluid, and injects air alternately, so that, when you get through aspirating fluid in the chest, the patient has the same amount of intrathoracic pressure in that side of the lung as he had before. In other words, you do not disturb the pressure equilibrium or pressure conditions in the patient's chest. I believe that by emptying the chest in this manner we can relieve the patient of the immediate distress; we can relieve him of the source of the additional toxemia and do it without shocking him.

Dr. H. P. Jones, New Orleans: I was chief of the medical service at Fort Bliss, Texas, during the flu epidemic. We reported by telegram to the families 1700 cases of pneumonia, of which number about 200 died. Most of these cases were postmortems. We found that probably 95 per cent. of the cases died within three or four days of influenzal pneumonia. There was some evidence of fluid in the chest cavity, with pleurisy, very frequently going on to the formation of pus, and there were other complications of influenza. Of the cases which did not die, 47 went to operation for empyema, of which 4 died. Our practice was to aspirate, watch the case very closely, and, then, when the case was ready physically for operation, we did an open drainage operation. In cases where we had bileteral empyema, it was necessary to aspirate both sides, and we frequently did that with the continuous aspiration, and that was simply a trocar with a long tube and bottle underneath the bed, and we would have two of these tubes going continuously without any other mechanical device. It was our practice in the cases of pneumococcic infection to make a good big resection and to put the fingers in the chest cavity and swab out as many pieces of fibrin and exudate as we could reach, feeling that the patient ought to recover. We lost no case of empyema following pneumonia. We paid particular attention to the condition of acidosis in these cases, which was exceedingly common. We fed them up before doing a thoracotomy. We, of course, used bottle blowing, and we tried out various substances for washing out the lung, and we concluded that the Dakin solution was the solution of choice. Certainly, formaldehyde substances for washing out the lung, and we concluded that went to postmortem had been operated on in which formaldehyde was used about the pleural cavity, so that they could not return to normal under any circumstances.

Dr. W. F. Parham, New Orleans (closing): I want to apologize for not giving the subject more adequate attention as my paper was being read. I dwelt especially upon the advantages of Dakin solution, properly carried out, and laid stress on the fact that sometimes it was inadvisable to use the open treatment, but to use the suction method of treatment in connection with the Dakin, and not only was the mortality reduced by that method of treatment, but that also there would be very seldom a recurrence of chronic empyema requiring one of the large operations for filling in the chest and expanding the lung.

HOW APOTHESIN COMPARES WITH OTHER AGENTS USED IN SPINAL ANALGESIA, WITH SPECIAL REFERENCE TO A NEAR ACCIDENT IN A CASE OF PROSTATECTOMY.*

By Dr. PAUL J. GELPI, New Orleans.

I have used spinal analgesia almost exclusively since its first introduction here and my cases now number over 1200. I have employed nearly all the agents used for this purpose and my results are so uniformly good that I consider it as safe as local analgesia.

The technique I employ is the simplest recommended. The puncture is made under scrupulous asepsis in the first, second or third lumbar interspace, depending on the character of the operation. Fifteen to twenty drops of spinal fluid are allowed to escape and twenty minims of sterilized water containing the analgesic agent are slowly injected into the canal. Iodine is applied to the skin puncture which is sealed with adhesive plaster. Apothesin is the drug I am using at present.

For a number of years I used cocaine. Analgesia was perfect, but, from time to time, symptoms of intoxication would manifest themselves, and it is only when the patient's head and shoulders were allowed to fall low that they assumed a serious character. Toxic symptoms were entirely eliminated when I made it a rule to elevate the head and shoulders.

Alypin was used for a time and gave promise of proving useful as a spinal analgesic agent, but with further experience I found that the analgesia was not always perfect and discarded it.

Stovain has been generally used. It does well in spinal analgesia, and my experience with it has been favorable. However, reports of several cases of bladder paralysis extending over a period of several weeks, led me to discard it in favor of something else.

Tropococaine has proved ideal in spinal analgesia. From the standpoint of toxicity, intensity and duration of analgesia, it meets all of the requirements. The position of the patient need not be taken into account. For the most part, my patients were placed flat on the table without ill effects, and this is a distinct advantage in bladder and prostatic work. Some operators have used it with the Trendelenburg position and have only words of praise for its use in that way.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

With the advent of the war, tropococaine could not be secured and the profession welcomed the introduction of apothesin as an analgesic agent. Having used it for over a year in more than one hundred cases, I find it compares favorably with the other agents I have employed.

Analgesia usually appears between 4 and 5 minutes. As to the intensity of the analgesia, I do not think it can be surpassed. This was evidenced in the treatment of extensive chancroidal ulcerations by cauterization. Some of the lesions extended well above a line connecting the superior spinous processes, and the patients always asserted that the operation was painless.

The duration of analgesia leaves nothing to be desired. In one instance the analgesic persisted for one hour and a half. This was a case of pseudo-elephantiasis of the penis and scrotum, requiring extensive resection and plastic repair.

The after effects are negligible. Headache occurs in a certain proportion of cases, but it is usually transient and slight. We meet with nausea occasionally and less frequently with vomiting. Retention of urine occurred in a few cases, but it was transient and it is a question in my mind whether it was not due to reflex action resulting from operation on the genitalia. The rise of temperature following apothesin analgesia is usually slight, in marked contrast with my early observation of spinal analgesia. I must not fail to mention the paralysis of lower extremities occurring with apothesin analgesia. It is usually pronounced, but passes off in a few hours.

For rectal work it is very satisfactory, the relaxation of the sphincters being marked. In urethral work it is also of decided value. In many cases of impervious strictures the complete relaxation of the muscular coat attending the analgesia permits the introduction of a small instrument and makes it possible to perform an internal urethrotomy where the external operation was thought necessary.

From experiments it has been shown that apothesin is equal in value to cocaine and exceeds novocaine. Its toxic action is identical in kind and degree to novocaine, but materially less than cocaine and free from habit-forming effects. A fatal dose to guinea pigs is several times that of cocaine. Toxic effect is apparently due to depression of the heart. When administered intravenously with adrenalin the depressing effect on the heart is counteracted. Experiments have demonstrated that adrenalin is the most prompt and powerful antidote to apothesin. Reports of cases of death from spinal analgesia shows a great similarity no matter what drug is used.

In the August, 1920, number of the A. M. A. Journal, Duboff reports a death from apothesin. His technic differs from the one we follow. The puncture was made in the second lumbar interspace. 7 c.c. of fluid were removed and mixed with 3 c.c. of distilled water containing one and one-quarter grain of apothesin. The mixture was injected into the spine and a few minutes later patient became ashy, experienced tightness in the chest, respiration became labored and death ensued. Duboff concludes that "The very definite and rapid ascending paralysis culminating in cardiac and respiratory failure, could only be due to the diffusion of the drug to the medullary centers." He further states that he believes "That analgesia with stovain, apothesin and cococaine is as safe as any local anesthetic."

The case which I wish to report was fortunately not fatal.

On December 2, 1920, about noon, I was called by my colleague, Dr. Brierre, to see Mr. A. N., male, white, married, 65 years old, who was suffering with retention of urine. He had not urinated since previous day. His bladder was enormously distended, his face was drawn, was perspiring freely and in great pain. He was exhausted from a sleepless night and repeated strenuous effort to void without result. Rectal examination revealed a very large prostate. A soft catheter had been tried, but unsuccessfully. An attempt to empty the bladder with a large curve prostatic catheter was unsuccessful and immediate operation was advised. At 2 o'clock a suprapubic cystotomy was practiced under spinal analgesia with apothesin. Outside of a moderate headache, there was nothing of note to record. A week later patient was again placed under spinal analgesia with a view of enucleating the prostate. The same dose of apothesin was used. When we were about to drape the sheets, patient complained of feeling weak, "everything in the room looked purple," as he expressed it. He was almost pulseless. Respiration rapidly became labored and his complexion was ashy. As the patient could talk, I ordered one nurse to give him immediately some aromatic spirits of ammonia and apply ammonia to his nostrils, and the other nurse to give him a hypodermic of whatever heart stimulants she had handy. She administered strychnine and digitalin. At that time the pulse in the wrist was not perceptible, but fortunately the patient was able to swallow with some effort. After a short time the pulse reappeared, the respiration became easier, and the patient stated "That he was getting more light" and gradually conditions returned to normal. The operation was performed and followed by an uneventful recovery. About the same time, I had two similar cases without any untoward symptoms. One, a man about 60, with a large median lobe. The two-stage operation was done, and in view of the presence of small foci of malignancy, a third operation for complete enucleation was done. The other case was one of a man of 64, operated for stone and enlarged median lobe. I have usually made it a point to elevate their heads and shoulders. In this particular case the patient was practically flat on the table, the pillow used being small and flat. Notwithstanding the fact that reports of cases of apothesin spinal analgesia, with the Trendelenburg position have been reported, I believe that in my case the position of the patient very likely had something to do with the symptoms above enumerated.

In conclusion I wish to state that, in my experience, apothesin has shown itself equal to the other analgesic agents employed in spinal analgesia. The incident above described has in no way shaken my faith in the drug. However, in the future, I mean to bear it in mind and always take the precaution of operating with the head and shoulders elevated as I used to do with cocaine analgesia. I have used apothesin exclusively since, and will continue to use it until some other agent is presented to us, either of greater virtue or still less toxicity.

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DISCUSSION.

Dr. E. L. King, New Orleans: During 1919 I was on duty in U. S. A. General Hospital No. 6, with Dr. Babcock, of Philadelphia, who was using a spinal analgesia exclusively except in cases where he had to go so high that he could not use it. At the time, he was using stovain, about ¾ gr. injected, using a fluid that was much heavier than spinal fluid, and immediately after the injection placing the patient with the head down. The operations embraced everything below the diaphragm, even gall bladder and stomach surgery, and these patients uniformly had no trouble during the operation. Once in a great while the anesthesia was imperfect. Then he would sit the patient up and give another ¾ gr. in the spine, turn him down and go to work. He did not seem to worry about giving two doses. He operated on everything, gall bladders, acute and chronic cases of appendicitis, rupture of the appendix, hernias, did all kinds of genito-urinary work, and any work that had to be done on the bones, such as osteotomy, and so forth. He said to me he got absolutely good results in his private work. I asked him what was the youngest patient he had operated on under spinal analgesia, and he replied "a patient two days old for spina bifida." There were no fatalities traceable to the anesthetic, and in the postoperative convalescence there was no trouble except headache, which seemed rather persistent, and occasionally a case of acute retention of urine.

Dr. W. McL. Hayes, New Orleans: Speaking about spinal anesthesia, I remember very distinctly two important cases in which we had fatalities in the hospital in 1909. One was a case of injury to the right hand. The anesthetic was given high up, and I recollect the patient died within two minutes after the cocain was injected. I recall very well that Dr. Parham was present at the time and he suggested opening the man's abdomen. On the same day, in the hospital, a surgeon was present who is now in this audience, where another patient was given spinal anesthesia for suppression of urine in whom an operation was to be done for decapsulation of both kidneys. This man likewise died. These are the only two cases of death that I saw happen on the same day. The gentleman who was to have decapsulated both kidneys of this patient is present in this room and did not get a chance to do it. Dr. Parham will remember that Dr. DeWalk (?) preferred to give the anesthesia high, and I recollect very well that it was his fifth case. He reported at that time his only fatality.

Dr. Paul J. Gelpi, New Orleans (closing): Referring to what Dr. Hayes has said, we have learned a lesson that we must use spinal analgesia with a great deal of care. I myself do not inject the anesthetic any higher than the last dorsal interspace. I usually go as high as the first lumber space. If you go higher than that you are taking a chance.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By Dr. P. T. TALBOT, Sec.-Treas.

A regular meeting of the Mississippi Valley Medical Society was held at the Reserve Community Club, Reserve, La., on December 7th, 1921 This was also the annual meeting of the Mississippi Valley Medical Society.

Drs. Geo. S. Bel, of New Orleans, Councilor of the Second Congressional District; Paul J. Gelpi, of New Orleans, Councilor of the First Congressional District; Homer Dupuy, of New Orleans, Councilor-at-Large, and P. T. Talbot, of New Orleans, Secretary-Treasurer of the Louisiana State Medical Society, were present at this meeting.

Dr. Homer Dupuy gave an interesting talk on "The Ear in Childhood"; Dr. Paul Gelpi gave an interesting talk on "The Cystoscope as an Aid to Diagnosis.

On November 30th, 1921, a meeting of the Executive Committee of the Louisiana State Medical Society was held, at which there was quite a large attendance.

The proposed meeting of the Parish Secretaries was discussed, and it was decided that this meeting be held jointly with the next meeting of the Executive Committee. The President, Dr. J. E. Knighton, appointed a Committee on Arrangements for this meeting, and it is hoped that each and every Parish Medical Society Secretary will make preparations to be present in New Orleans at this meeting. A definite date has not yet been set. The meeting, however, will in all probability be early in February.

We have been informed by the President of the Rapides Parish Medical Society, Dr. Fayette C. Ewing, Alexandria, La., that the following appointments have been made for the approaching meeting of the State Medical Society to be held in Alexandria, April 11, 12 and 13, 1922: Dr. Clarence Pierson, Alexandria, La., Chairman of the Arrangement Committee; Dr. Marvin Kappel, Alexandria, Chairman of the Finance Committe; Dr. P. K. Rand, Alexandria, Chairman of the Program Committee.

With the foregoing chairmen in charge of arrangements we have every assurance of a most successful meeting.

I would here like to urge the members of the State Medical Society to get in touch with the respective chairmen of Scientific Sections for the presentation of scientific papers for the annual meeting. It is important that we have the program of each section as early as possible, and this cannot be accomplished without the assistance of the membership. In the two previous issues of The Journal these various chairmen of Scientific Sections were announced, also the numbers of papers allotted to each section.

On January 12, 1922, a joint meeting of the Legislative Committees of the States of Georgia, Louisiana and Mississippi was held in New Orleans, La., at the call of Dr. Frederick R. Green, Secretary of the Council on Health and Public Instruction of the American Medical Association. Dr. Green presided at this meeting. The following doctors were present representing the respective States: Dr. F. K. Boland, Atlanta; Dr. F. Aberc, Dr. A. H. Bunce, Atlanta; Dr. L. C. Allen, Hoschton; Dr. D. R. C. Woodward, Adel, all of Georgia; Dr. H. E. Bernadas, New Orleans; Dr. Homer Dupuy, New Orleans; Dr. W. H. Block, New Orleans; Dr. P. T. Talbot, New Orleans; Dr. J. E. Knighton, Shreveport, from Louisiana; Dr. W. S. Leathers, University; Dr. E. A. Cheek, Canton; Dr. R. S. Curry, Jackson; Dr. Henry Boswell, Sanatorium; Dr. Glass, from Mississippi.

This was an extremely interesting meeting, and among the many important matters that were discussed and acted upon, it was decided that the conference go on record as approving an annual meeting of the chairmen of State Committees on Public Policy and Legislation, to be held under the auspices of the American Medical Association, for the furthering of the various important purposes of these committees, and for the discussion and possible solution of the many problems particular to each individual committee and state.

A vote of thanks was unanimously extended by the members of the conference to Dr. Frederick R. Green for the splendid meeting and the interest manifested by the American Medical Association, through Dr. Green, in the particular difficulties and plans of the states represented.

HAVE YOU PAID YOUR 1922 LOUISIANA STATE MEDICAL SOCIETY DUES? There is no time better than the present. If you have not paid your dues, please send your check in today—$4.00. We are anxious to send your name to the American Medical and Southern Medical Association as a MEMBER OF ORGANIZED MEDICINE. If your parish is not organized send your check to the Secretary-Treasurer of the State Medical Society, direct—No. 1551 Canal Street. If your parish IS organized communicate with the Secretary-Treasurer of your Parish Medical Society.

NEWS AND COMMENT.

THE ORLEANS PARISH MEDICAL SOCIETY held its installation meeting on January 9, at which the following officers for the year 1922 were installed: President, Dr. Wm. H. Block; first vice-president, Dr. E. A. Fossier; second vice-president, Dr. P. Graffignino; third vice-president, Dr. T. A. Maxwell; secretary, Dr. Elizabeth Bass; treasurer, Dr. John A. Lanford; librarian, Dr. S. Chaillé Jamison; additional members, Board of Directors, Drs. C. V. Unsworth, M. J. Lyons and L. A. Ledoux. The annual oration was delivered by Dr. A. B. Dinwiddie, President of Tulane University, and entitled "The Future of the Medical Profession." Music, dancing and refreshments were indulged in at the conclusion of the exercises.

MEETING LAFOURCHE PARISH MEDICAL SOCIETY. At a meeting of this society held at Thibodaux December 30, 1921, the following officers were elected for the year 1922. President, Dr. A. J. Meyer, Thibodaux; vice-president, Dr. J. M. Hubert, Des Allemands; secretary-treasurer, Dr. P. J. Dansereau, Thibodaux; delegate to State Society, Dr. L. E. Meyer, Thibodaux. The society meets subject to call. The next meeting will be held in Thibodaux.

MEETING OF CATHOLIC HOSPITAL MEN OF SOUTH. The first annual conference of the Catholic Hospital Association of the Southern States was held at the Schumpert Sanitarium, Shreveport, La., during December, 1921. Approximately 100 doctors and directors of hospitals representing Texas, Oklahoma, Tennessee, Arkansas and Louisiana attended. Addresses were delivered by Rev. C. B. Mouliner, president of the association, and Dr. J. C. Willis, of Shreveport.

LOUISIANA NURSES BOARD OF EXAMINERS. The semi-annual meeting of this board was held in New Orleans and Shreveport December 12 and 13, 1921. Eighty-two applicants qualified as registered nurses. The board is composed of the following doctors: John T. Crebbin, president; Joseph S. Hebert, secretary-treasurer; George S. Brown, New Orleans, Fred J. Frater, Shreveport, Robert W. Faulk, Monroe.

A MEETING OF THE LOUISIANA STATE BOARD OF MEDICAL EXAMINERS was held in this city December 1, 2, 3, 1921, with the following members present: Drs. Leon J. Menville, president; Thos. E. Wright, vice-president; J. E. Knighton, E. L. Leckert and Roy B. Harrison, secretary-treasurer. Fourteen physicians appeared for examination in medicine and surgery, eleven being successful. Of this number certificates were granted to nine and two were granted temporary permits, renewable at each meeting of the board, until their completion of citizenship. Applications for reciprocity of two physicians were approved and certificates granted. Nine midwives were examined, seven being successful and granted certificates. The next examinations will be held early in June, dates to be announced later.

RUSSIAN DOCTORS STARVING. The American Relief Administration cabled recently from Moscow urging consideration of the possibility of securing general relief in the form of food remittances for doctors. Their starving condition in the famine areas, where their help is badly needed, is seriously interfering with the vitally important medical program of the American Relief Administration officials for the benefit of the hunger-stricken people. In the Volga river basin, where cholera, typhus, malaria, dysentery and other stomach and skin diseases consequent on malnutrition, are rampant, 30,000,000 people are in acute need, if not in danger, due to the failure of last summer's crop. The best results for the large and important medical program of the A. R. A. can be secured by using to the maximum the Russian doctors whose condition especially in the famine area is desperate. The food remittances can be bought at the American Relief Administration offices, 42 Broadway, New York, and call for the delivery to designated individuals in Russia of packages, each costing $10, which contain 117 pounds of nourishing food. The Jewish Joint Distribution Committee, in reply to the appeal on behalf of doctors, has aypropriated $25,000 for remittances.

INTERNATIONAL SERA STANDARDS. The Medical Research Council of Great Britain, Pasteur Institute of France, State Institute of Italy, State Institute of Warsaw, Hygienic Institute of Basle, Pasteur Institute of Brussel, Kitasato Institute of Japan, as well as Austrian and German organizations, will co-operate with the United States Public Health Service, under the auspices of the League of Nations Health Committee, for the Unification of international standards of anti-toxic sera.

This work will be of great importance owing to the confusion caused by the various national standards of measuring the strength of anti-toxic sera.

CIVIL SERVICE EXAMINATIONS. The United States Civil Service Commission announces examination for the following positions: Roentgenologist, associate Roentgenologist, assistant Roentgenologist, junior Roentgenologist, bacteriologist, associate bacteriologist, assistant bacteriologist, junior bacteriologist, and surgeon's assistant, dental, eye, ear, nose and throat Applications will be rated as received until March 31, 1922.

CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS. At the Congress Hotel, Chicago, on March 6-10, inclusive, will be held the next congress on medical education, licensure, public health and hospitals. The Council on Medical Education and Hospitals and Council on Health and Public Instruction of the American Medical Association, Association of American Medical Colleges, the Federation of State Medical Boards of the United States, and the American Conference on Hospital Service will participate.

NEW HEALTH LAW TO BE SOUGHT. Owing to the recent ruling of the court restraining the city health authorities from confining women suspected of having social diseases in the Isolation Hospital, unless they are proven guilty, the Louisiana State Medical Society will seek to have the State Legislature pass a law empowering health boards to isolate suspected cases.

FREE RADIUM CLINIC. According to Dr. Raymond C. Tuck, state health officer of Florida, the state radium clinic established at Jacksonville about a year ago for the treatment of inoperable cases of cancer in women, will hereafter be open for the treatment of both men and women. Treatments are given only on condition that patient is a resident of the state and financially unable to pay for medical services.

THE RED CROSS COURIER, a weekly newspaper of national circulation, is being published by the American Red Cross, and will be its official organ. It is planned to have the publication take the place of all bulletins formerly issued at national and division headquarters.

BALTIMORE TO HAVE HEALTH EXHIBIT. In order to keep the public in closer touch with the Health Department, Commissioner C. Hampton Jones, of Baltimore, is planning a permanent health exhibit. Employes of the various bureaus of the health department are to hold monthly meetings for consultation and a systematic study of the problems they are called upon to face.

DALHOUSIE UNIVERSITY HAS NEW HOSPITAL. In accordance with a previous agreement, Dalhousie University will nominate the staff of the new tuberculosis hospital recently opened in Halifax, Canada. It is understood that the institution will be a part of the teaching plant of the University Faculty of Medicine.

JOURNAL CHANGES NAME. Announcement is made by *The Journal of Orthopedic Surgery*, published in Boston, that it will hereafter appear as a quarterly publication under the name of *The Journal of Bone and Joint Surgery*.

THE ILLINOIS STATE DEPARTMENT OF HEALTH has completed arrangements for a Public Health Institute to be held in Chicago early in March. Programs have been arranged and may be had upon request to the Health Commissioner in Springfield.

NEW ROCHELLE HOSPITAL ADDITION. A new wing to the New Rochelle Hospital to contain sixty beds will be erected through the collection of two hundred and sixty thousand dollars.

FUNDS FOR THE PURCHASE OF THE BIRTHPLACE OF PASTEUR, at Dole, in the Jura, have been supplied by John D. Rockefeller with the intention of making a museum in which will probably be housed an extensive medical and surgical library with authentic documents of Pasteur.

MUST BE REASONABLY CLEAN. The U. S. Public Health Service states that, although the menace of the vermin-bearing immigrant will practically disappear when typhus and plague subside in Europe, it will continue to insist that travelers to this country must be reasonably clean when they embark, regardless of any infection to which they are known to have been exposed. This will be done as an extra precaution to prevent transmittal of these diseases to this country.

GOVERNMENT NEEDS WORKERS IN REHABILITATION. The United States Civil Service Commission calls attention to the urgent need for reconstruction assistants and aides in physiotherapy and occupational therapy, trained nurses and physicians, to serve in hospitals and other establishments of the United States

Public Health Service and the Veterans' Bureau, in the care and rehabilitation of men injured in the world war. Application for these positions will be received until further notice. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or from the Secretary of the local Board of Civil Service Examiners at the post office or customhouse in any city.

THE ROCKEFELLER FOUNDATION announces that the International Health Board has accepted an invitation to co-operate in carrying out the general scheme of reorganization of the public health activities of the Philippine Islands, which was recently made public by the President of the Senate, Manuel Quezon.

MEDICAL SCHOOL MERGER. The board of regents of the University of Michigan, at a meeting held December 9, voted to merge the homeopathic medical school with the school of medicine of the university. The homeopathic school last year graduated seven students.

MEETING AMERICAN RED CROSS. The American Red Cross held its seventeenth annual meeting at its national headquarters, Washington, D. C., December 7. Officers elected for the year 1922 are as follows: President, President Warren G. Harding; vice-presidents, Robert W. DeForest and William H. Taft; treasurer, Eliot Wadsworth; counselor, James M. Beck; secretary, Mabel T. Boardman

YALE UNIVERSITY MEDICAL SCHOOL TO HAVE NEW BUILDING. Announcement has been made of the appropriation of $1,320,000 for the erection of a new building for the Yale School of Medicine by the Yale Corporation and the Sterling trustees from the Sterling funds, which will be known as the Sterling Hall of Medicine. The building will contain a library of 12,000 volumes, auditorium, rooms for unmarried instructors and laborers, as well as an animal house and power house adjoining. This is in accordance with the university's reorganization plan to expand the School of Medicine.

THE DEROALDES PRIZE of the American Laryngological Association is now open for competition to non-members of the association. The prize is a gold medal valued at $150, and is offered for the best original thesis relating to Laryngology or Rhinology. Competitors must have their theses in the hands of Dr. D. Bryson Delavan, 40 East Forty-first street, New York City, chairman of the prize committee, prior to April 1, 1922.

A CONTRACT FOR A NEW MEDICAL BUILDING at the University of Alabama has been let. It will cost $82,000 and it is proposed to begin its erection at once.

A SPECIAL MEETING of the Orleans Parish Medical Society was held on January 17 to consider the question of the physician's license tax. After much discussion it was decided to refer the matter to the legislative committee of the society with instructions to act in concert with the similar committee of the State Society. It was agreed to seek the co-operation of the secretaries of the various parish societies.

REMOVALS: Dr. F. T. Beatrous announces the removal of his offiice to 1232 Maison Blanche Building.

MARRIED. On December 26, 1921, at Forest Hill, Long Island, Dr. Victor C. Smith and Miss Beulah Roth, both of New Orleans.

DIED. On Dec. 30, 1921, Mr. A. B. Tipping, late Supt. of Touro Infirmary, aged 42 years.

On Dec. 30, 1921, at Houma, La., Dr. C. M. Menville, aged 63 years.

On Jan. 9, at Brandon, Miss., Dr. A. J. McLaurin, aged 71 years.

On Jan. 15, in New Orleans, Dr. Josiah I. Hunter, aged 56 years.

On Jan. 19, in New Orleans, Dr. Gustave Keitz, 73 years of age.

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Collected Papers of the Mayo Clinics, Vol. XII, 1920.

History of Medicine, by Fielding H. Garrison, A. B., M. D., Third Edition.

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WILLIAM WOOD & COMPANY, New York.

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Essentials of Laboratory Diagnosis, by Francis A. Faught, M. D., Seventh Edition.

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THE MACMILLAN COMPANY, New York.

The Glands Regulating Personality, by Louis Berman, M. D.

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Ephraim McDowell, "Father of Ovariotomy" and Founder of Abdominal Surgery, by August Schachner, M. D., F. A. C. S.

Clinical Diagnosis, by Charles Phillips Emerson, A. B., M. D., Fifth Edition.

PAUL B. HOEBER, New York City.

Acute Epidemic Encephalitis, an investigation by the Association for Research in Nervous and Mental Diseases.

WM. J. DORAN.

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MISCELLANEOUS.

Panama Canal Press, Mount Hope, Canal Zone. Proceedings of the Medical Association of the Isthmian Canal Zone, Vol. XI, Parts 1 and 2, January, 1918, to December, 1918, Vol. XII, Parts 1 and 2, January to December, 1919.

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REPRINTS.

Cancer a Mutiny of Body Cells, by L. Duncan Bulkley, A. M., M. D.

Les Grandes Formules Modernes De La Nutrition, by Th. Merrill et H. Violle.

Nos. 146, 231, 285, 390, 349, 406, 410, 421, 426, 439, 498, 505, 522, 547, 551, from Public Health Reports.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for December, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	1	1	2
Intermittent Fever (Malarial Cachexia)	1	3	4
Smallpox			
Measles			
Scarlet Fever	1		1
Whooping Cough	1		1
Diphtheria and Croup	1	1	2
Influenza	3	3	6
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	38	34	72
Cancer	26	9	35
Rheumatism and Gout	1	2	3
Diabetes	7	1	8
Alcoholism	1	1	2
Encephalitis and Meningitis	3		3
Locomotor Ataxia	2		2
Congestion, Hemorrhage, Softening of Brain	29	17	46
Paralysis	4	4	8
Convulsions of Infancy	1		1
Other Diseases of Infancy	13	11	24
Tetanus		1	1
Other Nervous Diseases	5	1	6
Heart Diseases	58	28	86
Bronchitis		4	4
Pneumonia and Broncho-Pneumonia	24	22	46
Other Respiratory Diseases	1		1
Ulcer of Stomach		1	1
Other Diseases of Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	6	13	19
Hernia, Intestinal Obstruction	3	3	6
Cirrhosis of Liver	3	2	5
Other Diseases of the Liver	5	3	8
Simple Peritonitis			
Appendicitis	4	3	7
Bright's Disease	13	12	25
Other Genito-Urinary Diseases	14	15	29
Puerperal Diseases	5	4	9
Senile Debility	2	2	4
Suicide	6		6
Injuries	29	15	44
All Other Causes	23	21	44
Total	334	238	572

Still-born Children—White, 15; Colored, 13; total, 28.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death rate per 1000 per annum for month—White, 13.82; colored, 25.96; total 17.16. Non-residents excluded, 14.73.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.13
Mean temperature	61.
Total precipitation	3.49 inches

Prevailing direction of wind, southeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 MARCH, 1922. No. 9

EDITORIAL.

THE PHYSICIAN'S LICENSE TAX.

That the system of inflicting a license tax on the physicians which prevails in this state is archaic, unequal and unjust need not be argued between the physicians themselves. That a serious and intelligent as well as systematic effort should be made towards obtaining its repeal at the next session of the Legislature does not require discussion.

We are pleased to note that various medical organizations, State and local, are preparing to use their influence in favor of the repeal of that most obnoxious tax.

We must make bold to suggest, however, that in any action it may take the profession must proceed in a rational and dignified manner. The arguments we can use with our legislators are both valid and numerous; they may be used with force and sincerity, but we must not resort to covert threats or attempt any veiled intimidation. We can show that Louisiana is one of the only two states in this country imposing such a tax, the others having seen the light one by one and having done away with it. We can argue that the doctors, by teaching hygiene and the prevention of disease to the public, are the only ones who are working in the direction of diminishing their own income. We can point to the vast amount of free work and charitable endeavor indulged in public institutions and in private practice by the physicians, in addition to all other contributions which they make like all members of the community having the ability and the desire so to do. We can demonstrate the fact that ours is a consecrated calling, next only to the ministry in considering that doing good is as much our function as earning our living.

But, there must be no whisper of "strike", as with a disgruntled labor union; no menace of embarassment for our medical institutions through a plan to abandon our work therein by a concerted movement. Not only would the innocent and helpless suffer if such an undertaking was attempted, but we would be tumbling from our pedestal, we would indeed be commercializing our noble profession by thus bargaining for our rights.

Let us stand united for justice and what is but a puny recognition of our value to the community and we can not fail of success.

CHARITY HOSPITAL NEEDS.

The medical staff of the Charity Hospital turned the tables on the Board of Administrators of that institution by having the members of the latter as their guests at an informal dinner given at the Chess, Checkers and Whist Club about a month ago. The meeting was not only thoroughly enjoyable but tended to show that the spirit of reciprocity evolved a year ago on an analogous occasion had not evaporated. It showed more —that this spirit had gathered strength and that the two elements were prepared to act in harmony and with greater power.

In the various prandial talks it was brought out clearly that the members of the Board understood their duties and the necessities of the institution, that the only thing lacking was a sufficiency of funds in order to enable the hospital to carry on its purpose in the most approved and beneficial fashion. It was shown, also, that the Staff members, being duly impressed by the above evidence were ready to co-operate by every legitimate means in the effort to obtain these necessary funds.

The entire medical profession of the State should unite to back up the arguments and the efforts of the Board when the latter approach the Legislature in regard to the appropriation which the State should make for the maintenance and improvement of the Charity Hospital. Great as is our hospital there is yet room for improvement, nay more, there are some actual necessities still to be provided.

PREPARE FOR THE STATE SOCIETY MEETING.

Much timely information regarding the coming meeting of the Louisiana State Medical Society will be found in this issue under the heading of the ''Bulletin'' of the Society.

In addition we are informed by the secretary that the president, Dr. Knighton, has appointed Drs. Menville, Leckert, and A. V. Friedrichs as members of a committee on Scientific Exhibits, which is an innovation and should add much interest to the meeting.

Of course, the commercial exhibits will be made as usual and we are assured that the local committee of arrangements is hard at work to make this next one a banner meeting in more ways than one.

This is the time to make plans for a pleasant and instructive trip to Alexandria. Our previous experience there should be sufficient to make the regular attendants anxious to repeat and their stories should make the others also eager to attend.

Now, all together, for Rapides!

ORIGINAL ARTICLES.

(No paper published or to be publisheed in any other medical journal will be accepted for this deparment. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expeceted to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

MALARIAL INFECTION AS A POSSIBLE CAUSE OF SYMMETRIC GANGRENE OF THE EXTREMITIES WITH REPORT OF A CASE.*

By J. BIRNEY GUTHRIE, M. D., Professor of Clinical Medicine, Tulane University, Lt.-Col. Medical Reserve Corps, U. S. A.

Shortly after the opportunity of studying the case which forms the subject of this communication, the writer received the paper of H. Alarmartine(1) entitled Malarial Gangrene of the Limbs.

Alarmartine reports three cases of his own and mentions various papers, some of which appeared as early as 1883 on the subject of gangrene occurring in paludism all in the French literature. He believes that malaria is a causative factor in the production of an endarteritis obliterans as is syphilis and typhoid fever. Alarmartine's three cases were seen in the Macedonian campaign in 1916 and he mentions twelve others seen by other French army surgeons during this campaign. All three of Alarmartine's cases were of massive gangrene and in all three amputation was done. Two of the three patients survived.

The material after the operation was submitted to pathologic examination and in all cases *endarteritis obliterans* was found.

Paisseau and Lemaire(2), also in the French army, report cases of gangrene which they believe due to malarial infection. They say: "The interesting fact is the following: Malaria is capable of determining not only partial gangrenes whose origin can be said to be vasomotor; but also massive gangrene of the extremities, especially the lower extremities which, by their course and their location can even simulate the gangrene that occurs in typhoid fever."

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

Previous to Paisseau and Lemaire's communication it was conceded by some that peripheral circulatory disturbances such as erythromelolgia, acrocyanosis, local asphyxias of the extremities, ulcers, anaesthetic pseudo panaris and the symptom complex of Raynaud's disease could be produced by malarial infection. It was however denied until the medical reports of the French Macedonian campaign were available that massive types of gangrene such as Paisseau, Lemaire, Lerremboure and Alarmartine describe could also occur from this cause.

The opinion regarding the pathology held by Paisseau, Lemaire and Alarmartine is that arteries show a reduction in diameter with irregularities in vascular caliber associated with lesions of endarteritis extending into the elastic fibres of the media. A thrombosis of the vasa-vasorum was also noted. This pathology was not confined to the arteries of the extremities; but was also found in the abdominal viscera associated with numerous infarcts, interstitial hemorrhages and foci of necrosis, simple or fatty.

All available methods of excluding other infections were used.

Alarmartine describes three types of gangrene:

(1) Forms with slow course recalling the dry gangrene of syphilis or of senility.

(2) Forms with rapid evolution accompanied by severe toxic infectious symptoms. These are further subdivided, (a) symmetric gangrene of both feet in cachectic individuals where the secondary infections play the chief role; and (b) where a massive gangrene from the outset occurs in patients with malaria in whom the general condition is still good. In this last form, the lesions of arteritis are capable of rapid generalization.

(3) Forms limited to the extremities presenting the aspect of Raynaud's disease which situated on the feet have often been mistaken for chill-blains.

Alarmartine lays stress on the necessity for early amputation by the open-flap method in the massive types and mentions the futility of expecting anything of quinine medication in the way of a restoration under these circumstances; but he insists quinine must be given before and after the operation.

The case history herewith embodied is that of a patient who comes under class 3 of Alarmartine, that is, presenting the aspect of Raynaud's disease.

Monro(3), quoted by Elsner(4), gives the following definition:

"An attack of Raynaud's disease may be constituted simply by one attack of local asphyxia prolonged over months without interruption."

Monro mentions as occasional causative factors in Raynaud's disease acute infections (typhus, typhoid, small-pox, scarlet fever, diphtheria, measles, pertussis, erysipelas, influenza, syphilis, tuberculosis, *malaria,* rheumatism, rheumatoid arthritis, quinsy, splenic enlargement, hemorrhagic and suppurative processes.)

The name which is a classic inheritance comes to different individuals, a different significance. Obviously it applies to a single phase of local asphyxia. Whether or not we are willing to concede a nervous factor in the etiology is even now a matter of debate. Sachs(6) believes this to be an important factor.

The weight of authority, however, seems to be on the side of favoring an acceptance of the vascular origin of the disease. Leo Buerger(5) strongly deplores the use of the term *endarteritis obliterans.* Buerger believes this is not the essential pathology of the disease. In the work Buerger has done he found a different pathology from this. He did not find either the proliferation of the interna described by Von Winniwater nor the parietal white thrombi which was considered by Weiss and Von Mauteuffel as the essential factor

According to Buerger the lesion is a thrombotic process in arteries and veins whose cause he has not explained To this lesion which is a red clot, he gives the name Thrombo-angitis obliterans. Buerger examined material secured at autopsy and at operation and found thrombosis varying in age, degree of organization and canalization. This thrombosis extended at times in the leg to a level above the popliteal

Surely we must admit the existence of a condition varying in intensity from a transient spasm giving the picture of various phases, (1) *intermittent claudication* of Erb, (2) erythromelolgia, (3) Raynaud's disease (4) symmetric gangrene occurring in various regions and producing massive tissue death.

It is very difficult to explain the role that the plasmodia produce in the production of thrombo-angitis obliterans. We know of no part that the organism plays in producing thrombosis. We are concerned here with a different pathology from that we find in the terminal arterioles of the brain in some pernicious cerebral malarial infections where these vessels are found occluded by a thrombus containing masses of erythrocytes the majority of which are infected with plasmodia.

CASE OF RAYNAUD'S DISEASE.

Double infection and syphilis	**Plasmodia Malaria Plasmodia Falciparum**

Charlie Roberts, a mulatto laborer, aged 22, and a native of Louisiana, was admitted to the medical service of Charity Hospital, New Orleans, September 3, 1919.

On admission he was suffering intensely with throbbing pains in hands and feet and complained also of abdominal "cramps."

The family history was negative.

Patient had a chancre in 1918 and early in this same year had suffered from malaria and an attack of measles in close succession. He had been doing heavy work and living in a lumber camp up to August 30, 1919; and just previous to onset of illness hands became quite severely abraded in the course of his work. The wounds were superficial and no suppuration occurred.

On admission he was in acute pain, requiring morphia for its relief. Physical examination of chest and abdomen was negative, excepting for moderate enlargement of the spleen, which was hard and palpable 3 c. m. below costal border on deep inspiration. Sclerae were slightly tinged with yellow. Patient was restless from pain. The daily temperature ranged from 97 degrees to 100 degrees F. Pulse, 96. Pupillary and tendon reflexes were normal. There was marked prostration and an anxious, sunken appearance of facies.

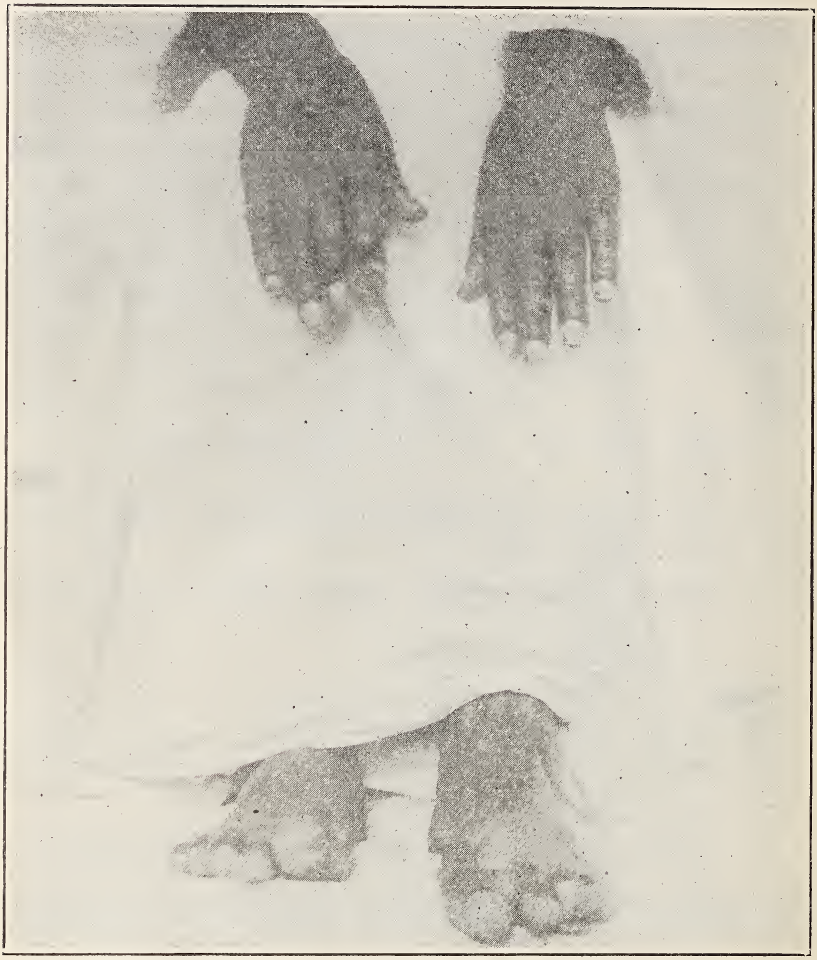

Plate 1. Case of Chas. Roberts, colored. Symmetric asphyxia of hands and feet.

The hands and feet were cold and showed lesions as follows: Left hand—Middle, ring and little fingers were discolored, ranging from a bluish black color at the finger-tips to a mottled red near the base of the fingers. The left ring finger seemed more extensively involved over the inter-phalangeal joints and over the metacarpo-phalangeal joints were cyanotic areas. The nails of these three fingers were cyanotic. Matrix of the nail of the ring finger was markedly involved. Thumb and index finger were not discolored; but were cold. The same changes, but less severe, were observed in all the fingers of the right hand. The right index was deformed from an old injury. Radial arteries were palpable and pulsating.

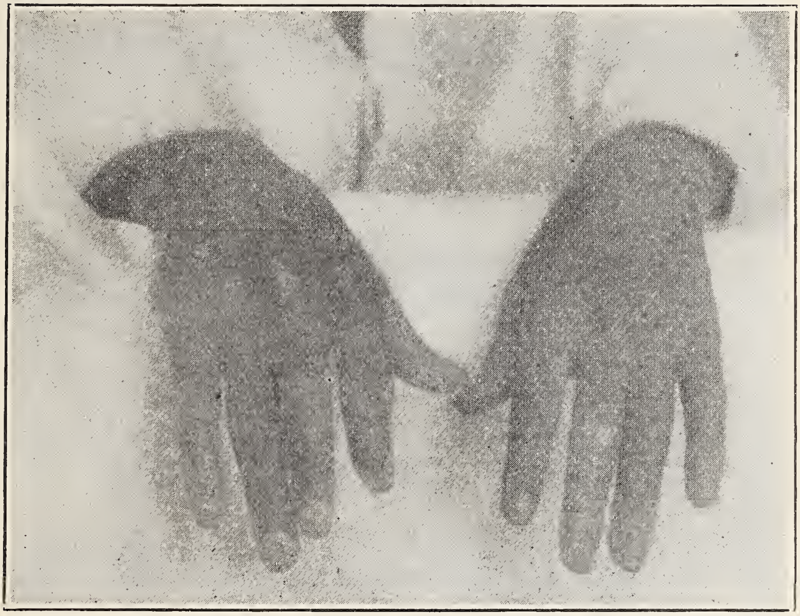

Plate 2. Case of Chas. Roberts, colored. View of hands, showing areas of discoloration ,desquamation and superficial sloughing.

Toes of right foot were involved, with deficiency of blood-supply, especially apparent on the plantar surface of the great toe. The left foot showed less severe lesions than the right. Dorsalis pedis arteries were easily felt to pulsate. Blood pressure was systolic 100, diastolic 60. Urinalysis on admission showed satisfactory elimination as judged by specific gravity and daily output, considerable albumen, but was free of sugar and casts.

Wassermann from blood serum was positive. Leucocyte count on admission was 18,000; Differential—Polymorph 78; Large Mononuclears II.; Small Mononuclears II. No plasmodia found at this time.

Pain on admission in feet was intense and morphia was required. Extremities were disinfected, dusted with boric acid and swathed in numerous layers of sheet wadding surrounding a sterile dressing. Heat was applied. This gave great comfort and the necessity for morphine passed.

Five days after admission, under treatment pain was entirely gone.

During first two weeks after admission the temperature ranged between 99 degrees and 101 degrees until September 17, when there occurred a sharp rise to 105 degrees, followed by sweating. Another search for plasmodia was made at this time and a double infection of malarial parasites was found,—tertian and falciparum. Quinine was given and the temperature promptly declined. Quinine was continued until discharged.

Spinal puncture yielded a clear fluid, which ran from the needle at the rate of 120 drops per minute. Examination of the fluid gave a negative Wassermann reaction; cell count 27; negative globulin.

On account of low blood pressure, intravenous glucose solution, in strength of 5 per cent, was given and repeated in 700 c. c. dosage. This seemed to improve the circulation in the extremities. The mottled appearance on the back of the hands and dorsum of the feet disappeared. Two black sloughs formed, one on tip of the left ring finger and one over the plantar surface and over terminal phalanx of the right great toe. A dressing of Dakin's solution was applied. This corrected a gangrenous odor which was present and apparently served to aid in the separation of the sloughs.

Injections of mercury into the buttock with sodium iodide by mouth were given with slight interruptions during patient's stay in the hospital.

So far as I can see, this case serves to attract attention to the fact of the occurrence of peripheral asphyxias in the extremities in the course of malarial infection. I have never seen such a clinical picture produced by syphilis. However, it is impossible to say that syphilis played no part here. The course of the disease was less severe than the types described by Paisseau, Lemaire and Alarmartine.

One is convinced that the very severe types necessitating amputation might come from the same cause. Here the case is a medical one and was very properly retained in the medical service. Of a severer type, the surgeon would have to be called early to save life by amputation.

In this case the patient was put on the road to recovery, so far as the local lesions are concerned, by external warmth and the intravenous fluid injections. Five per cent glucose was chosen because of its food-value. It seems better adapted for this purpose than normal salt.

It is probable that even a temporary increase in the blood pressure thus obtained might improve local blood supply and limit the tissue death. Cases are on record where relief from pain has been very marked from this procedure. No morphia was given at any time after the first intravenous infusion. Pain promptly subsided.

It will be noted that no vaso-dilators were used. It was believed that an increase in blood pressure was desired. The success of intravenous infusion seems to bear out this theory.

No quinine was given until the occurrence of the paroxysm and the finding of parasites made it obviously imperative. Quinine would unquestionably have hastened recovery if given earlier in standard dosage.

The writer is struck by the similarity in appearance of this patient so far as the mottled, cyanotic appearance of the dorsum of the feet is concerned, to the cases of ''trench foot'' seen by him in soldiers at the front in France.

Until the etiology of these vascular accidents is worked out it will be necessary to study the various cases encountered with hope that some etiologic factor may be found, the knowledge of whose tendencies may lead to the explanation of the cause of the lesions. It is probable that they are due to a variety of causes working singly or combined.

If the plasmodia malaria can play a leading part in the cause, it is for us to determine. My purpose in making this report is to call attention to this possible cause of a hitherto unexplained condition.

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DISCUSSION.

Dr. C. W. Duval, New Orleans: The pathology of malaria is confined to the blood, and in order to have gangrene following malarial infection we have to conceive of some interference, partial or complete, with the blood supply of a part. The malarial parasite may act as a mechanical obstruction to smaller vessels, the peripheral part of the system, and in that way cut off the blood supply to a part. Malaria may, through a toxin, give rise to endarteritis. It may in this way produce gangrene, but we have no evidence post mortem in our fatal cases of malaria of there being an endarteritis or a thrombosis of vessels brought about by the malarial parasite.

Quite a few authorities believe that malarial organisms produce a toxin. I think our great authority in the South (Dr. Bass) believes there is a toxin, but it has never been isolated. It is conceivable that a toxin would bring about irritation of the endothelium of smaller vessels and in that way occlude the vessels through the proliferation, bringing about what is commonly known as an endarteritis.

I am inclined to believe in these cases of gangrene that Dr. Guthrie reports, including his own cases, there was an endarteritis present that was independent of the malaria, caused by something else, perhaps syphilis. We know that in syphilis we have the smaller vessels throughout the body specially picked out. Endarteritis is a common lesion in syphilis. In such cases that contract malaria, we might attribute to the malaria the gangrene that has developed, when, as a matter of fact, the gangrene is the result of the syphilitic infection or results from syphilitic infection. We have no evidence to show that malaria in any way, that is, the parasite of malaria, affects the epithelial lining of the vessels throughout the body. We have evidence of the endothelium being affected in the case of typhoid fever which Dr. Guthrie mentioned. There we get focal necrosis of the internal organs, particularly the liver. In malaria I have not seen focal necrosis of the liver nor any evidence in this or other organs of an interference with the blood supply by any activity on the part of the endothelium. I am inclined to think these cases of gangrene in malaria are really brought about by some other cause, and not by the malarial parasite.

Dr. Allan Eustis, New Orleans: I recall a case when I was engaged in general practice in Vermilion Parish, where there was a great deal of leprosy and malaria. Malaria is often associated with leprosy. Unless you make microscopic slides of the blood you may be misled. When you find gangrene of the toes it is well to find out whether there are any areas of anesthesia. I do not mean to say that the cases reported by Dr. Guthrie are lepers, but I simply throw out this caution. In leprosy we often have a fever, and I have seen more than one case of leprosy treated for a long time as malaria.

Dr. C. C. Bass, New Orleans: I wish to direct attention to the fact that a considerable per cent. of people living in Louisiana outside of cities have malaria and malaria parasites in their blood from time to time. It would be reasonable to expect, therefore, that malaria parasites would be found in a considerable per cent. of cases of gangrene of the toes or other conditions. Therefore, the fact that Dr. Guthrie's patient was found to have malaria does not prove at all that the gangrene of the toes was due to it. It seems to me more probable that it was a case of gangrene of the toes, the cause of which is unknown, in a patient who also had malaria.

I wish to endorse the opinion expressed by Dr. Duval that the toxin of malaria is not one that gives rise to inflammation; neither does the malarial parasite produce inflammation. A simple obstruction of the capillaries by malarial parasites would hardly be sufficient to produce actual gangrene because of the short duration of the presence of given parasites in a given capillary.

Dr. J. B. Guthrie, New Orleans (closing): I wish to thank the gentlemen for discussing my paper. The reason I brought this subject before you is that I wanted to put this case on record for future reference. This is a case of Raynaud's disease which represents the phase of peripheral asphyxia. What have we said when we say Raynaud's disease, excepting that it is a phase of local tissue asphyxia? We want to try and work that thing out, and that is the reason I brought the case here. The occurrence of a positive Wassermann, the occurrence of these two cases of plasmodia, and the apparent enthusiasm I encountered in Dr. Alarmartine, who felt he had described something, and had many converts in the French Army concerning the acceptance of the idea of the malarial origin of these gangrenes in the cases he saw, are matters of importance to us. It is a matter that may involve the finding of other cases and some of us may stumble on the cause.

SUGGESTIVE MIXED TREATMENT IN CHRONIC MALARIA.*

By **THOMAS E. WRIGHT**, Monroe.

One of the very difficult and disappointing diseases we are called upon to treat is chronic malaria; and it is one possessing great potential danger to the public.

A brief discussion of the etiology and pathology involved in chronic malaria, is necessary in outlining this suggestive treatment. There must be some substantial reasons for chronic malaria, and a tenable grouping here would be about as follows: Neglect (a) on the part of the patient who attempts to treat himself; whose treatment, therefore, is spasmodic and inefficient. Neglect (b) on the part of the patient in carrying out subsequent treatment as directed by the physician. The patient takes advantage of the loss of control after the physician has discharged him from an acute attack. Neglect (c) on the part of the physician to treat the case intensively enough when the patient is under control, or fails to give instructions for subsequent treatment, or both. Chronic cases, therefore, may be classified largely as neglected cases.

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*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

Another factor in the production of chronic cases the author begs the privilege of suggesting at this time. The prevalence of definite strains of bacteria, with varying differences of growth and development, and with widely varying symptoms they produce in the human body, is now a matter of common knowledge. Even the spirochete is accused of having certain selective tendencies, suggesting strains. The marked difference in behavior of the symptoms and responses to treatment of acute cases of malaria, might not altogether be due to the differences of resistance on the part of the patients, nor to the preparations of quinine used, nor to the methods of administration, nor to the lack of absorption. Even Carter of the P. H. S. has aptly termed this particularly resistant type as ''quinine fast'' plasmodia; and one of his men, Deriveaux, who experimentally infected himself to demonstrate that malaria could be conveyed by a certain species of mosquito, gave to me his experience in getting rid of his infection. Among the things he told me was that he had faithfully and intelligently taken his medicine in the routine way during the greater part of one summer season, with frequent manifestations of this disease, and frequent positive plasmodia findings. At the time of this conversation he told me frankly that when his blood was finally free, he did not anticipate another experimental experience with plasmodia. Deriveaux was a malarial worker.

These factors mentioned above, as lack of absorption, etc., are of chief consideration, but along with them might be considered certain resistant strains of plasmodia, which under conditions varying as widely as many types of bacteria that develop strains, might be particularly resistant to quinine, even more than we might imagine. Hence, I would add this possible factor to the above, as another speculative etiological influence in the production of chronic malaria, and an added difficulty in the line of usual treatment.

Intelligent observation of chronic malarial cases, together with the fact that we have definite pathology, not alone in the spleen, but in the kidneys, the alimentary canal, the bone marrow, even the heart muscle itself which often shows degeneration of the musculature, might suggest the presence of multiple foci, along with the effect produced by toxins. The absence of plasmodia in some of these organs where pathology is found in chronic cases does not argue definitely against possible old foci that formerly actively harbored plasmodia. That these multiple foci are just outside the peripheral blood, is more than a supposition, and is borne out by the behavior of chronic cases, as I will mention below.

I beg the privilege here of drawing a parallel between two diseases that in many respects have points of similarity, and this similarity suggests a possible similar line of treatment,—I refer to syphilis and malaria. In the acute stages of each, the comparative ease of treatment, alongside of the many disappointments found in treating the chronic cases, we find a resemblance unusually striking. Even the surprises in treating the acute stages of each, the persistent positive Wassermann with peristent symptoms right in the face of judicious treatment, is duplicated in occasional acute malaria running persistent symptoms and persistent plasmodia under excellent treatment. The one we may find very violent from the beginning, out of all proportion to our expectations, so may the other. In chronic or neglected syphilis when the circulating blood is rendered negative, and treatment suspended, you have to wait only a short time when most probably we get a positive reaction. Chronic malaria is equally loyal in this respect. In syphilis the individual may live many months, even years, in comparative comfort with very little treatment, while in others there are frequent and serious reminders of the disease,—so in chronic malaria. Chronic syphilis is notorious for its multiple foci; chronic malaria, without a doubt has its multiple foci, but chiefly away from the peripheral blood.

Chronic or neglected syphilis responds very slowly to anything except Arsphenamine, and then better when this treatment is supplemented with mercury and iodides. This splendid response to Arsphenamine is most probably due to two factors- first a pronounced spirochetecide action, second, a strong penetrating action into the multiple lesions or foci.

This leads us to the principal question, what type of treatment is best suited in chronic malaria? A treatment giving a rapid and decided plasmodiacidal effect, together with a substantial penetrating effect as regards the multiple foci, is one rather to be desired. The nearest approach to this in my opinion and one that has given quite satisfactory results in my hands, is both simple and easy and is about as follows: ten grains of quinine are given each morning by mouth, ten grains are given the same day, in the afternoon, intravenous, or just the reverse according to convenience. Each day this is repeated for four to six days, according to conditions; then twice each week, selecting appropriate days, for two or three weeks, according to conditions, such as improvement, degree of control of patient, etc.

While it has been my custom to follow this intensive treatment with appropriate medication later at intervals, I am not certain that it is imperative. However, I recommend it for the present.

I offer this to you purely as a suggestive mixed treatment in chronic malaria. Even a modification of this intensive treatment, if preferable, should give definite and constant improvement.

We have an official report for the State of Louisiana for the years of 1918, 1919, 1920, of 1559 deaths from malaria. There are approximately 300 cases of malaria for each death; this would give us for these three years, in round numbers, 467,000 cases of malaria of all types. Of these different types a safe estimate is that 10% are chronic cases; making, in round numbers, 46,000 cases of chronic malaria in this State during the past three years. It is further estimated, and these estimates I am not inclined to question, that each case of acute malaria costs in vitality and in actual working and earning power $40.00 per year. Chronic malaria is notoriously worse in this loss than acute malaria, and a safe and low estimate would be $50.00 per year, making this loss from chronic malaria alone approximately an average of $1,000,000 per year for these past three years. This is only an economic loss, and one naturally appealing to the average business individual; but there are other losses that might be mentioned equally as interesting.

Therefore, considering these facts, it occurs to me that the profession as a whole will heartily welcome any additional light thrown upon this disease.

DISCUSSION.

Dr. C. C. Bass, New Orleans: I do not know that I have much discussion to offer. Dr. Wright has called attention to the parallelism between malaria and syphilis, and I also quite agree with him that the fundamental principles involved in the treatment of the one are largely involved in the treatment of the other. I do not think, however, that our treatment of syphilis is so preëminently successful as to justify us in taking it as an example. On the contrary, the treatment of malaria is so preëminently successful that we are much more successful in treating malaria than we are in treating syphilis. I am disposed to think the treatment of syphilis can be modified somewhat after the treatment of malaria rather than vice versa.

I have no doubt but that the treatment suggested by Dr. Wright will cure a large number of cases of malaria. The proportion that can be cured by it will depend largely upon the length of time the treatment is continued. I believe, however, that the intravenous administration of any drug for the treatment of a disease like simple malaria is not justified. It is a formidable procedure which, it seems to me, should be fully justified by the absence of other equally effective methods before it should be undertaken. In the treatment of malaria I do not believe that can be said to be the case.

There are practically no cases of malaria that are not relieved of their acute symptoms by 30 or 40 grains of quinine given by mouth within a period of three or four days. There are practically no cases that continue to have parasites in their blood while taking as much as 10 grains of quinine sulphate by mouth daily following the relief of the active symptoms. Quinine given by mouth, without danger or harm to the patient, practically always relieves the symptoms and cures the infection. Therefore it does not seem to me that the more or less dangerous and harmful intravenous administration is justified except perhaps in very rare, exceptional instances.

Dr. B. A. Ledbetter, New Orleans: I have listened to Dr. Wright's paper with great interest, and was also much interested in the remarks of Dr. Bass. It takes a lot of nerve to get up and differ with a man of Dr. Bass' prominence in malaria, as we all look upon him as one of the greatest men of our profession on malaria. He has certainly given it more thought; and has practically taught us very nearly all we know about it. However, I beg to differ with him in regard to the intravenous use of quinin. I also want to differ with Dr. Wright in his method of intravenous use of quinin. When you meet those cases of comatose malaria, with hematuria, black water fever, unconscious state, with a dirty, foul, thick coated tongue, you might just as well throw your quinin into the Mississippi River as to try to give it by the mouth, because it is not absorbed.

What is the history of these cases? If you do not succeed in getting the quinin into the blood stream, you do not kill the plasmodium. My experience has extended over a period of 20 years, and up to the last three years I have practically lost all such cases. I have not hesitated in these cases to give 100 grains of quinin, either intravenously, intramuscularly, or by the rectum. I have given nothing short of 100 grains in 24 hours. It does no harm. I have never seen a patient die after that dosage has been given. I have yet to see a case where quinin administered intravenously has done any damage. The great harm in giving quinin intravenously is using too large a quantity of solution. The heart muscle is friable, it is suffering like every other organ from the effects of the poison given off by the parasite. If you will give a solution of 8 ounces of saline, 20 grains of the bi-hydrochlorate, because it is soluble, in equal parts of water, you will rarely ever have any trouble with your cases, for the reason the large amount of saline introduced into the blood stream causes dilatation of the heart, and you lose the patient by the large amount of solution that you pump into the patient's blood stream.

I have treated six of these cases in the last year and a half who I did not think had a possible chance for recovery, and have not seen a single bad result from it. Quinin introduced intramuscularly is an excellent method, but there is one drawback, namely, by giving it intramuscularly it sometimes causes abscess or a breaking down of the tissue. The intravenous route is by far the best. I use this method for about four days until the temperature drops, then go back to quinin by the mouth, and give nothing less than 45 grains a day.

Dr. W. P. D. Tilly, New Orleans: I having practiced in southwest Louisiana, and having the experience of my father of twenty-seven years back of me, it occurred to me to speak of the use of quinin in chronic cases of malaria, which was a favorite with my father. He had a nasty dose of medicine. He had possibly an advantage in that wine was still used and he gave the quinin in a bottle of wine. After many years of trial and all my patients complaining, I decided that some day I would improve on that old nasty dose. My success was fair. The taste was bad and the complaint was great. So during my interneship I started to study the question of chronic malaria through the laboratory report, and gave quinin in different ways by the mouth, giving 40 or 50 grains a day. Quinin was given intramuscularly, and it occurred to me that if I could give the quinin in solution, where the circulation would take it up, that is, the mucous membrane of the intestinal tract, I would get just as good results. I treated a certain number of patients in one way, and a certain number in another. I gave them quinin intramuscularly and by the mouth, and finally I gave them quinin in solution. I will mention the end results within one week or three weeks. The patients with quinin given by the mouth were no better. Those to whom quinin was given in solution in hydrochloric acid were well within one week. At first, I proved they received the full physiological action of quinin by selecting the cases, and within five or fifteen minutes; I had rashes. After a few years' trials I discovered the fact that one grain of quinin, three times a day, or even twice a day, in solution, was better than 20 grains by mouth. I will mention the routine way I finally adopted of giving quinin where the plasmodium was present in the circulation continually. I started to give quinin in solution in hydrochloric acid in concentrated form. One dram of quinin to 3 drams of hydrochloric acid to one ounce of lactate of pepsin, 20 drops in capsules (No. 0) **every two hours.** After **48** to **72 hours** I had a negative report from the laboratory. Continuing under this treatment, in from one to three months I was free from chronic malaria.

Dr. T. E. Wright, Monroe (closing): I thank you for your liberal discussion of my paper. I have offered it purely as a suggestion. Some sort of intensive treatment, something that promises a kind of penetrating effect, appears logical. The disappointments felt by all of us when treating chronic cases of malaria, in some respects justify us in reaching out for something better.

The disposition of the plasmodia to assume a resistant form when quinin is administered in aggravating rather than plasmodiacidal doses, has been demonstrated clearly and fully. This might be classed as a proof of its self-preservation characteristics. When quinine is administered in appropriate doses one of the first things we notice is a disposition to get away from the circulating blood. It goes somewhere; where? And yet the symptoms may persist for some time with a negative blood. You have been asked by the laboratory man, "Have you given this patient any quinin?" This to account for a probable negative blood finding. This is another evidence of self-preservation characteristic on the part of the plasmodia. In chronic malaria, where the patient doubtless has been hammered with quinin in an indefinite manner, give the plasmodia credit for building up some sort of protecting influence,—and it is this that I maintain must be met with a type of treatment as I have outlined.

THE SINUSES.*

By **DR. JOHN T. CREBBIN**, New Orleans.

This short paper is intended for the general practitioner, rather than the specialist.

Although the ancients recognized and treated diseases of the Sinuses, it is only within the last few years that they have received the attention they deserve, especially in their relationship to diseases of the eye. Wedge, in 1786, was the first one to call attention to diseases of the eye caused by sinusitis. The obstruction to drainage may cause a venous stasis with an accommodative paresis, inflammation of the iris, retina, choroid, and optic nerve, conjunctiva, and glaucoma.

Ptosis, strabismus, and sudden blindness are generally the result of the diseases of the sphenoidal cells, but narrowing of the field of vision may also occur as the result of ethmoiditis, or diseases of the maxillary antrum. Orbital abscess with consequent exophthalmos is most frequently the result of diseases of the ethmoidal cells, but may occur as the result of sphenoidal infection. One of the early ocular signs is a change in the perception of red and green, in the formation of a scotomal ring, which may be closed or broken. A large percentage of headaches, when an error of refraction has been eliminated, is doubtless of sinus origin. As a rule, there are two frontal sinuses, but there may be but one, and in rare instances, there may be none. It must be borne in mind that the frontal sinuses are subject to wide variations, both in size and conformity. There are also the posterior ethmoidal and sphenoidal cells, anterior ethmoidal cells, and two maxillary antrums.

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All sinuses vary greatly in size and shape in different individuals. They are all supplied by the trifacial nerve, and this fact should be borne in mind in tracing the route of reflex phenomena. There may be an infection of one or of all of the sinuses.

In infection of the antrums, the frontal sinuses and the anterior ethmoidal cells, the discharge makes its way anteriorly, and is blown from the nose. In infection of the posterior ethmoidal and the sphenoidal cells, most of the pus finds its way into the pharynx. Any discharge of pus from one nostril, especially if periodic in character, which smells and tastes fetid to the patient, should always excite the suspicion of the doctor of the presence of an infected antrum. Facial neuralgia is most commonly caused by diseases of the maxillary antrum. Crusts on the middle turbinate are most common in ethmoidal suppuration, but may be present when there is a scanty discharge from either the maxillary or frontal sinuses, or from the ethmoidal cells. When the ostium is in the floor of the sinuses, drainage is by gravitation, but when placed above the floor, the secretions are conveyed by ciliated epithelium.

Empyema of the sinuses, especially the frontal, are more common after epidemics of influenza, than at any other time. Whether the influenza bacillus is capable of setting up a purulent inflammation or not, is difficult to determine. It is possible that in the intense engorgement of the nasal mucous membrane, a blocking up of the infundibulum takes place, and pus producing germs gaining access to the inflamed mucous membrane, give rise to the discharge. At the onset of the disease, the mucous membrane becomes greatly edematous, and a large amount of sero-mucus is discharged. The disease may gradually subside or the secretion may become purulent. Again, the discharge may go on to the chronic stage, and the mucous membrane hypertrophy, and become covered with granulation tissue and polypi.

Less than 25% of maxillary infections may be caused by the fangs of the bicuspid or molar teeth penetrating the cavity. The chief symptoms are pain and discharge of pus. Pain being more severe and constant in acute attacks.

Much relief can be obtained from spraying the nostril of the affected side with a two per cent solution of cocaine, and a one to five thousand solution of adrenalin, followed by an application of a thirty per cent. solution of Lunargen or Silvol applied on a small pledget of cotton, and allowed to remain from ten to fifteen minutes in the nostril. Ice bags may help to relieve pain. This line of treatment will apply only to acute cases, whereas in chronic frontal sinusitis, the removal of the anterior end of the middle turbinate bone or a submucous resection will cure a large percentage of the cases. In exceptional cases, more radical measures may be necessary. Puncture and irrigation of the infected sinuses may effect a cure, but when the case is chronic showing deep seated pathological lesions, it is but a waste of time. The extraction of a tooth for drainage from the maxillary antrum cannot be too severely condemned, unless a diseased tooth or necrosis of the alveolar process is responsible for the discharge. This should be the only excuse for resorting to such unscientific procedure.

Before resorting to radical operations, radiographic pictures should be made. In doing so, the minutest details regarding technique, angle of direction of the rays, position of the head, distance of the target of the tube from the head, and length of exposure, should be followed.

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DISCUSSION.

Dr. William T. Patton, New Orleans: The subject of the sinuses is a very important one, and is close to the general practitioners as well as specialists. Hardly a day passes that we do not have patients coming in saying, "I have a cold in the head," and we ask them why they did not come sooner. We find that they have had this so-called cold in the head for ten days or two weeks. A "head cold" that will last more than five days is usually a sinusitis. It may be catarrhal or suppurative. It usually starts as a catarrhal condition, and winds up in a suppurative condition. Any case that does not clear up in five days should not be tampered with.

There is one condition we see in our clinic, and I have seen three or four cases, and that is, the ethmoid sinus rupturing into the orbit.

All three of these cases were in children under eleven years of age, and were first seen by general practitioners, one of them having been seen by an oculist. The patient came in with a high fever, exophthalmos, the upper lid very much edematous, the patient apparently very sick, and the eye was pushed forward and outward. All three of these cases had been incised with a pin point puncture, a very small opening made. Why, I do not know. One case we lost because it was seen too late. The other two cases I saw on the third day, and in these I made a large incision, got into the ethmoid cells, and drained the pus, and the orbit was able to take care of itself. These sinuses rupture into the orbit. The orbit is practically in contact with the ethmoid cells. The partition between the two is thin, and we have only muscles and fascia covering the orbit to afford protection, and it is easy to get into the orbital tissues. Infection may spread and involve the optic nerve and subsequently enter the brain. Whenever you have these cases to deal with, incise them freely. You can follow the orbit straight back because the periosteum is separated and you can find the foci of infection and relieve the condition.

Dr. Crebbin mentioned the symptoms of trouble in the antrum, which are usually pain and temperature. Do not let these symptoms fool you. He was speaking of acute antrums when he mentioned those symptoms. Antrum cases will give absolutely no symptoms except pus, and usually there is no pain over the antrum. Do not let pain over the antrum mislead you. The pain is not really over the antrum, but over the orbit or back of the head.

Another thing I have been impressed with is that some years ago, when I was enthusiastic about doing the Caldwell-Luc and other radical sinus operations, I visited Skillern in Philadelphia, and he said he had the hospital full of cases in which radical Killian operations and radical sinus operations had been done. I asked him how long certain cases had been in the hospital, and he replied, they had not been there very long, one four weeks, and the other eight weeks. When you do a radical operation you form a cicatricial cavity which does not function the same. Of late years I have not done any radical operations on the antrum except in polypoid and necrotic conditions. It is surprising how many polypoid conditions of the antrum will clear up with simple Douglas puncture and working or making opening into antrum through nose. We have three doctors who have chronic antrums, two of them not well enough to be considered really well. They were operated on six or seven times, have always had trouble, and the sinuses remain open. One of them had a radical operation on one side, and the other side was washed out several times. The one on which the radical operation was done troubles him. The other side seldom ever troubles him. Simply puncturing and washing out is enough. My advice is not to be in too big a hurry to do radical operations on these cases.

Dr. M. P. Boebinger, New Orleans: I have in mind a case of exophthalmos, in a negro, at the Charity Hospital, where in working on him recently I did a local Knapp, and when I report this case it must be as a failure. This poor negro showed quite a little discharge. My friend, Dr. Feingold, saw him. The fundus is negative. However, the eye has changed very markedly, and one of the postgraduate students, during my absence on the morning of the operation, was manipulating the eyelid and the eyelid became caught in the rear of the ball, and he was in a quandary as to how to restore the lid. One of our confreres was present and readily placed the eyelid back in place. This case is an absolute failure, as I shall report in my paper. My reason for saying it is a failure is because the os planum was completely destroyed, the contents of the eye was thrust over into the upper portion of the nasal chamber, and in my attempt to excavate the ethmoids and the sphenoids from that side, I made a rank failure. All I could do was to curette the orbital fat and I had lots of hemorrhage. I am very sorry, but I am not going to give up in despair, because I know there is still another method. I will go through the antrum of Highmore, feeling I can possibly do something for this unfortunate individual.

Another case, that of a child eight years of age, in whom nasal polypi had extended from the nasal vestibule, which I was able to reach and remove. I did a Mosher with absolute failure. In two weeks' time the polypi returned. The mother did not give up, and two weeks later I did a Knapp operation, and am glad to report that the youngster is now well.

Another case of sphenoidal sinus trouble. The case was one of continued conjunctivitis which was referred to me by a general practitioner. I knew nothing about the eye condition. A skiagraph showed ethmoidal and sphenoidal sinusitis. Operation on these sinuses cleared up the conjunctivitis.

Dr. J. Joseph Ryan, New Orleans: For the relief of sinusitis, I would like to emphasize Dr. Crebbin's suggestion of submucous resection for the removal of septal deflections that interfere with perfect drainage and ventilation of the inflamed and infected sinuses. I am glad to note that Dr. Crebbin has suggested the removal of the anterior end of the middle turbinate for the correction of frontal sinusitis, and not turbinectomy, as is done occasionally. Turbinectomy should be performed only as a final procedure or preliminary to radical sinus operations. The middle turbinate, as we know, is so placed that it is a protector to the openings of various sinuses of the head, and as such I would urge that we be more conservative in the complete removal of these organs. Hypertrophy of the turbinates which we see so frequently associated with sinus conditions can be corrected by such treatments as cauterization, the removal of the anterior or posterior ends, compression by Beck's conchotribe, etc.

Dr. J. T. Crebbin, New Orleans (closing): In reference to pain and fever, I believe Dr. Patton misunderstood what I said. I said pain and discharge. These patients may or may not have fever. That is not an infallible sign, but these patients will invariably have more or less pain according to the severity of the attack. They are also likely to have some discharge.

In reference to the radical treatment, I mentioned in my paper that it is seldom necessary to perform a radical operation for a frontal sinus involvement, but I am still wedded to the theory that maxillary involvement of long standing is one of the conditions which require radical measures.

THE ORAL FOCUS IN SO-CALLED SCIATICAS. TWO INTERESTING CASE HISTORIES.*

By DR. WM. A. LURIE, New Orleans.

To review the subject of local infection, and particularly its relation to rheumatism, joint pains and neuritis, would require a review of the greater portion of the medical literature of today.

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*Read before the Orleans Parish Medical Society, January 23, 1922.

Opinions vary in the stating of the causes of these conditions from that of the mutability of germs to their selective action and from the formation and circulation of toxines of a selective character to that of an area of least resistance and traumatism. In selected cases, or in certain series of cases, each causative factor is tenable and lengthy arguments in either direction can find many adherents and supporters as well as many who will ridicule and oppose.

This paper will not deal with any theories as to etiology nor with any unusual findings in cases, but is intended to point out that often the real etiological factor is overlooked, not in its removal, but rather in its complete and radical removal. If it be infection or intoxication, the source of the supply of either must be eliminated and properly so to produce the sought for results. (This contemporary does not of necessity confine itself to oral foci, but to any focus anywhere in the body as well.) The focus must be removed to prove the required relief. Its partial removal usually is of no value, for recurrence is bound to take place, and in the majority of instances no relief is experienced. Through the incomplete removal of the focus and the failure to attain relief for the patient, one is often led to believe that too much importance was attached to the focus discovered. It must be recognized that multiple foci of infection may exist concomitantly, either orally, or orally and elsewhere about the body. The extra oral or the metastatic focus cases are not considered within the scope of this paper, however the same rule of the complete removal of the cause holds true in them.

Oral foci of infection may be of several varieties, ranging from a primary focus of irritation and toxicity from some growing embryological factor, (tumor or unerupted tooth or cyst) to a focus the result of some secondary infection of dental origin, often introduced through dental operations. Vast numbers of cases of oral infection of more general and superficial type of the characters of a general or even a localized gingivitis and the so-called pyorrhea alveolaris must not be lost sight of either. However cases of the latter character are not considered in this paper.

The two cases about to be reported are of the type of secondary infections due to infections following directly or indirectly after dental operations. The distinction of direct and indirect infection is made at this time for infection may follow directly as the result of root canal surgery in a tooth or the root canal surgery may have been performed in an attempt to remove or relieve a pre-existing infected area. In either instance when it is determined that a given focus might be the cause of symptoms the ultimate procedure is similar and a complete operation for the removal of the cause must be undertaken for the relief of the patient.

It is insufficient to consider the removal of an infected tooth by the operation of extraction as a complete removal of infection. Such a procedure is incomplete surgery for it seldom removes the infection. Curettment through the socket of an extracted tooth is not always possible. Curettage through a socket increases the traumatism of the operation and adds to the patient's infection and intoxication by the maceration of the infected tissue within itself or the introduction of another infection. It is safer surgery and better practice to expose the site of infection by a flap operation, reflecting the mucoperiosteal tissues and the subsequent removal of the buccal plate of the alveolus, permitting of the removal of the infection or irritant by an open surgical method. In this manner no infected nor thickened membrane is left in the socket. Infection and irritation can thereby be amply removed. The traumatisation of the tissues is minimized.

Case 1. Mr. L. B., 46 years old. Personal and family history were negative in their relation to the present illness except that several years before the patient had met with an accident which caused him to be bed-ridden, for about a month. Since then had remained in good health up to the time of present trouble, which started three weeks before coming under my observation.

Pain developed suddenly in the left hip and leg. Pain was aggravated on motion, alteration of position of limb causing great suffering. Pain was more particularly confined to the sacral region and along the sciatic nerve. Diagnosis of sciatica was made by the consulting physician and the treatment by salicylates instituted. Because of the severity of the pain, patient was given codein.

Examination of the patient generally was not undertaken by me, but a careful examination of the mouth was made. This patient had lost but two of his allotted teeth, and one was crowned with a gold crown. One of the missing teeth was an upper right first bicuspid, and the other the upper left first molar. The remaining teeth were without fillings and all were in excellent state of preservation and well cared for. There did not appear to be any irritation about the gum margins, of the type of gingival irritation or infection.

The several suspicious areas were radiographed. The history of the two areas, that of the crowned lower left first bicuspid and the space of the upper right first bicuspid was given as follows: During the accident several years previously the upper first bicuspid was broken. After several ineffectual attempts to save the tooth it was supposedly drawn. The area did not heal well and the patient was subsequently told that a piece of root was left behind, but that it would cause no further trouble. After several months this area healed over. Some time later a "gum boil" developed at the site and was opened. This boil drained for a long period of time. After the healing of the gum boil the patient experienced no further trouble locally. The crowned lower left first bicuspid was crowned about four years previously because of extensive decay. The tooth had not been devitalized and no root canal filling was visible radiographically. The tooth evidently was non-vital.

In the pictures of these two areas extensive alveolar absorption was visible in the upper area. The entire tooth socket could be outlined and a piece of tooth root was still visible within the socket. In the picture of the lower jaw tooth there was not the marked area of absorption visible but rather an area of denser bone structure was to be noted about the apex of the tooth. The thickened bony area was evidently the result of local resistance to the toxicity from the putrid pulp within the tooth.

Under local anesthesia the area in the upper jaw was opened, the portion of root was dissected out and a large amount of granulomatous tissue removed from the alveolar process. The area was then sterilized by iodine. The tissue flap was sutured into place with horse hair. A similar dissection of alveolar process was made in the lower jaw and the crowned first bicuspid removed.

The following day the patient reported having had a comfortable night without the use of codein and that he could walk about with considerably less pain. After three days the patient left the city and returned to his home. The operation sites were healing by primary union and the painful sciatic condition fast disappearing. No internal treatment was given. It is now a year since this case was seen and there has been no recurrence of pain.

Case 2. A local physician, 42 years old. Personal and family history negative. Had been in good health up to about six weeks before the time of present history, when pain of severe type developed in the sacro-iliac area, particularly along the left sciatic nerve and radiating to the coccyx and knee.

This patient had come to me about eighteen months previously, while in good health, for an X-Ray examination of the teeth, which at that time revealed several non-vital teeth, five of which showed infection and one tooth with a non-vital pulp. There was nothing done with the infected teeth, although the one with the non-vital pulp was treated and filled by his dentist. This patient remained in good health for about eighteen months, when following an acute rhinitis, there developed gradually the pain as described and simulating sciatica. The patient at first thought the pain might be of traumatic origin. Treatment by rest, hot packs, hydro-therapy, was undertaken without relief. Atophan in doses up to 60 grains daily gave only temporary and transient relief. At this time a second set of dental radiograms was taken and confirmed the findings of the infections previously described. The infected teeth were then ordered removed. Removal by frank surgery and the opening of each tooth socket through the alveolar process was advised. The patient, however, permitted but one tooth to be removed and, on not experiencing relief, consulted an orthopedic surgeon, who ordered a belt to be worn; later, he visited a nationally-known genito-urinary surgeon, who claimed the prostate was enlarged and the seat of trouble. A bacteriologist found colon bacilli in the urine and thought possibly his findings were the cause of the persistent trouble.

This complete examination from various sources was made with the hope of determining the source of infection and undertake its elimination. As a result three possible sources for the trouble were discovered. In attempting to treat this condition non-surgically, the patient went to Mt. Clemens for a ten-day stay, when he realized that the mineral baths were of no benefit. While returning home through Washington, the patient subjected himself to the removal of two teeth in the hope of relieving himself from pain. These teeth were extracted by a dentist who did not undertake a curettment of the infected sockets. Upon his return to this city, a period of three weeks after the extraction, there had been no cessation of pain following the extraction of the teeth. Oral examination showed very little healing of the areas from which the teeth had been extracted. The patient at this time was advised to have the remaining infected teeth removed by frank surgery, as it had been originally suggested at the time of the onset of the pain.

Under local anesthesia, the areas from which teeth had been extracted three weeks before were reopened, the alveolar process resected and there were removed from the apices of these sockets several granulomata. The other infected teeth were removed by alveolar resection.

Forty-eight hours after removal of the teeth and the granulomata, the sciatic pains disappeared, much to the gratification of the patient. It is now several months and, to my knowledge, there has been no recurrence of pain and no discomfort in the sciatic region and the patient is now comfortably wearing a partial plate, through which the missing teeth have been replaced.

Reviewing these two cases as an expression of oral foci of infection, it appears that the conclusions to be arrived at from them are, first, that it is more important to remove the foci of infection in their entirety, once they are discovered, than to attempt their removal by the loose method of tooth extraction.

Second, that tooth extraction without the eradication of the irritant, as a granuloma or the infection, as an abscess or cyst, only adds to the possibility of the introduction of a secondary infection and perhaps the aggravation of the symptoms.

Third, that a great amount of infection or intoxication may be taking place without symptoms from apparently dormant infected areas accidentally discovered, and that symptoms from such foci may develop spontaneously when over-intoxication does take place or secondarily after a lowering of vitality through some acute infection, or traumatism.

Fourth, that dental replacements of the missing teeth should be such as does not continue the irritation, infection or intoxication for which the removal of the teeth was performed.

Dr. S. K. Simon: I would like to ask Dr. Lurie whether he has had any personal experience with the employment of autogenous vaccines made directly from the pus of an apical abscess in the treatment of remote infections in the visceral organs. The point has been stressed already, and I think correctly, that remote effects of dental infection are frequently present in the gall bladder, appendix and other abdominal viscera, even after the original focus has been removed. Dr. Lurie will probably be able to enlighten us whether stomatologists have taken up seriously the question of not only curing dental infections but the infectious sequelae in other organs as well.

A CLINICAL STUDY OF THE COLORIMETRIC METHOD FOR DETERMINING GASTRIC ACIDITY.*

(PRELIMINARY REPORT.)

By DANIEL N. SILVERMAN, M. D., New Orleans.

Up to the present writing our observations in the clinical use of the colorimeter for estimating free gastric acidity extend over a period of one year and four months. At the beginning of this investigation the apparatus as devised by Shohl and King was made available for practical use for the first time. And it may be stated that we were among the first to receive this outfit for trial outside of their own laboratories.

The method in question simply has as a basis the determination of the real or physiologic amount of hydrochloric acid in the gastric contents by the colorimetric method of measuring H-ion concentration. The employment of colorimetry for this purpose is by no means a new procedure. Being based upon the H-ion concentration it is recognized by chemists as second only to the more accurate electrometric method. The latter is entirely too complicated and requires too much apparatus for the ordinary clinical purposes. Osborne(1) of Australia foresaw a more extended use for the indicator ladder while Hawk speaks of it as one of the best procedures for determining the physiologic HC1. But, not until Shohl at Johns Hopkins worked out a simplified technic did we possess something of practical value along this line. This having been accomplished quite recently, you will not find mention of such work in our leading clinical text-books on the digestive tract including the latest of Aaron and of Bassler.

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*Read before the Orleans Parish Medical Society, January 23, 1922.

As fully explained in their original article(2), Shohl and King are using a range of standard acid mixtures of known amounts with the indicator thymolsulphonephthalein. This variety of colors corresponds to certain acid values expressed in terms of H-ion concentration from 1.4 (hyperacidity) to 3.0 (anacidity) or at the same time in terms of the number of cubic centimeters of tenth-normal hydrochloric acid in every one hundred cubic centimeters of gastric contents The filtered sample of gastric contents is taken in the amount of 2 c. c. and two drops of the indicator solution, 1% thymol blue, are added from the pipette. The resulting reaction is compared, as described by the authors, with the standards.

There has been selected for our particular study a comparison of the results obtained by using the new colorimeter with the results of titration with N/10 sodium hydroxide after adding dimethylamidoazobenzol (Toepfer's reagent). The cases in this series represent various types of gastro-intestinal disturbances in which a gastric analysis was indicated. The two very obvious advantages of the colorimeter, namely simplicity and portability, justified a clinical study in detail in order that we might learn more about it and as to whether or not one could recommend it for general usage.

Of some fifty samples of gastric contents we found that H-ion concentration gave practically the same results as the readings by titration in normal and hyperacid cases. On the other hand colorimetric readings varied a great deal with Toepfer's method in some cases of low acidities. For instance, four samples of contents gave free acidities varying from 5 to 10 by titration wheras the H-ion concentration was 3.0 (anacidity) in each case. Great importance must be attached to such differences, especially in the phase of low acid cases. The absence of hydrochloric acid is of the utmost importance from a clinical standpoint according to Aaron. For, as this author rightfully states, when hydrochloric acid is found to be present it is unnecessary to test for pepsin or pepsinogen, since this ferment is always present when free hydrochloric acid can be demonstrated. Aside from this fact, the researches of Rehfuss has convinced us that degrees of subacidity stand for disturbances of pathological character directly or indirectly altering the gastric function. He has found that, in a study of several hundred digestive stomachs of normal individuals so called hyperacidities were frequently encountered. This was not at all true of the low acid reaction. Therefore, we believe that the severity and chronicity of certain disease conditions interfering with gastric secretion may be better judged by a more accurate means of determining the stomach acidity.

The detection of an absence of free HCl often means a great deal towards restoring many of the necessary functions of this chemical in gastric and duodenal digestion. To enumerate a few of them, one might mention the sterilizing property, prevention of fermentation and putrefaction, activation of pepsinogen and the stimulation of pancreatic secretion to some extent at least by indirect hormonic action of secretion.

Whenever there was shown to be an achylia with Toepfer's reagent, as illustrated by two of our cases, the colorimetric reading was 3.0 (anacidity). Cases of very mild degree hypoacidity were shown to have slightly less acid than the normal by both methods. This group constitutes a large proportion of the abnormal gastric secretions resulting from some chronic biliary and appendiceal infections, neuroses, chronic gastritis and a very few systematic syphilis. As we are well aware, the rule of thumb cannot be applied to the effect of certain diseases upon gastric acidity and one may occasionally find an hyperacidity in one case of cholecystitis while another case with the same diagnosis will fall into the usual group of this disorder, namely, subacidity.

With the almost daily application of colorimetry in these analyses many points of interest and of value for the future betterment in its application have come to our notice. Filtered specimens of gastric contents can now be examined hastily with a minimum of apparatus. Titration has too often been dependent upon supposedly N/10 sodium hydroxide which has been carelessly handled and exposed to other chemicals and to glassware over long periods. The alkali has been found to deviate from its original strength. This statement is based upon analyses of a few such samples obtained from private and hospital laboratories.

Just as the colorimeter is applicable to the one-hour extraction of the test-meal it may be used for the interval or fractional specimens. From the present indications one might assume that sufficient experimental evidence is being presented to prove that the simple one-hour digestion as determined by the analyses of contents taken at that period is more accurate than tests made every fifteen or twenty minutes until the stomach is emptied.

Gorham(3) has shown with a series of pathological cases that different portions of the same gastric chyme yield varying degrees of acidity Whereas, Wheelon(4) just recently in his studies of digestion in normal medical students confirms the findings of Gorham. He (Wheelon) surprisingly proves to us that the height of stomach acidity is reached at one hour if the entire contents are recovered after that length of digestion while the fractional method delays the point of maximum acid secretion and emptying time to two hours or more. Our own studies in the light of these experimental facts leads us to believe that a more detailed study of gastric stasis and of the quantity of secretion can be made by obtaining the entire residue at one sitting.

Referring now to the character of specimens examined with the colorimeter, we have learned that, whenever filtrates remain cloudy, this opacity will prevent accurate readings. Therefore it is sometimes necessary to filter more than once or to centrifuge for a few minutes before adding the indicator solution. This has not been the case excepting in rare instances.

Occasionally specimens are altered by the presence of foreign coloring matter such as bile or blood. Filtering or centrifuging will sometimes do away with this factor to a small extent. At best, readings are only approximate in such instances. However, the effect of such colors upon thymol blue as an indicator and the result after comparison with the standards is no greater than the effect upon Toepfer's titration. With contents that are too highly colored equal parts of distilled water may be added to one or two c. c. of the sample before adding the indicator. This last procedure is sometimes followed in instances where the specimen is of insufficient quantity or when the clinician is desirous of repeating the test. Doubling the volume by adding equal parts of filtrate and water always halves the concentration of acid. The reading of the standard that matches this sample must therefore be doubled.

In three instances we have examined the filtered contents with the colorimeter and then re-examined them after periods of twenty-four, forty-eight and as long as seventy-two hours. The acid content was constant although each specimen was kept in the laboratory for the already stated periods of one, two and three days.

Having spoken of the material that varies, that which is examined, we shall now refer to the instrument and some observations that have been made upon it in the many months of its use. After a lapse of approximately eight months, there was a noticeable precipitate of dye and a slight change in color of some of the sealed standard acid mixtures. This naturally prompted some investigation into the stability of the standards and they were returned to the manufacturer for testing. They reported back as follows: There was no essential change in the anacid and hypoacid mixtures (3.0, 2.4, and 2.0). The 1.8 had become identical with 2.0 and the 1.6 was almost identical with 1.8 without a marked change. They stated that 1.4 (the hyperacid value) had undergone a decided change and did not match any of the other standards. Since this original set had been used prior to the change in the formula for producing these standards, it may be that the newer ones which we are using at present will prove more stable. Although, it is quite likely that there will always be some alteration after aging just as has been the case with the dilutions of phenolsulphonephthalein as employed in the renal function test.

CONCLUSIONS

The colorimeter is a simple, time saving instrument of sufficient accuracy for the clinical examination of the free hydrochloric acid in gastric contents

Colorimetry, being based upon the scientifically accurate means of determining the true hydrochloric acid, the H-ion concentration, has been found to more nearly approach the exact results obtained by the last named method than Toepfer's titration. And, this has proven of great value since dimethyamidoazobenzol often gives too high readings.

Contents to be examined must be clear as possible and devoid of coloring matter to give the best results

The standard solutions should be tested from time to time for any change in their original color and new ones substituted after a lapse of six or seven months.

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DISCUSSION.

Dr. F. M. Johns: I should like to commend Dr. Silverman for his energy in trying out this latest addition to our laboratory methods on so large a series of cases.

The same trouble with abnormal gastric contents that he has reported, I have unfortunately encountered also. All of the indicators for hydrogen ion concentrations are seriously influenced by the presence of albuminous bodies particularly, and I do not believe that this method will ever be useful for determining the acid ionization in a fluid that is often rich in albuminous bodies. Salivary secretion and bronchial mucus are also large contributing factors of variation in different cases. The reason, as Sorenson long ago pointed out, is that the indicator is not primarily affected, but that the degree of dissociation of the acid ions from the acid and acid salt is profoundly influenced by albuminoid bodies.

We have in the past years built up an enormous amount of literature of symptomatology and therapeusis centering around gastric estimations made with Toepfer's reagent for determining the presence and amount of free hydrochloric acid. An experiment that shows conclusively that terms of hydrogen ion concentration cannot be interpreted in terms of free hydrochloric acid as titrated by Toepfer's may be performed as follows:

To a neutral gastric content containing no free hydrochloric acid, add a definite amount of hydrochloric acid and then determine the free hydrochloric acid values with Toepfer's (which will be found to be almost identical with the amount added), and then determine the hydrogen ion concentration by means of thymol blue, which is the indicator used by the colorimetric method. The reading with the latter will usually be only about one-fourth as much as with the former. Thus it would seem to me that for this particular purpose, the old titration method, with the standard reagents, had best be continued.

Again, the very valuable check furnished by determination of the combined acids is also of value and this method is not obtainable with the colorimetric method.

Dr. S. K. Simon: Dr. Silverman is to be commended upon the excellent piece of experimental work he has undertaken. This method was suggested by Scholl and King, about one and one-half years ago, and up to the present time little confirmatory work has been published regarding its merits. Though my experience with the method does not cover as large a field as does Dr. Silverman's, I have gained a few impressions concerning its relative advantages over the titration method, as well as some of its disadvantages. In its favor, it might be said that a greater degree of accuracy is possible with the use of the colorimeter, especially in experimental and physiological fields. Likewise, the necessity for frequent re-titration, and restandardization is obviated, which constitutes one of the main disadvantages connected with the use of the usual decinormal solutions. However, in the employment of all colorimeter methods the personal equation is made to figure to a great extent in the readings. This has been true of the phenolsulphonephthalein test, in the urine, as likewise with the various color estimations of hemoglobin. There is also added danger of a fading or change of tint, inherent in all standard color solutions. The necessity for a clear filtrate is another point which has been stressed by Scholl and King to attain accurate readings with the colorimeter, and this, as is well known, is not always easily obtainable with the gastric filtrate.

Altogether, I think it would be fair to say that while this newer method of colorimeter reading constitutes a distinct advance in the field of the analysis of gastric secretions, the old-time chemical or titration method still lends itself best, I think, for practical routine clinical application.

THE REPORT OF AN INTERESTING CASE OF INFECTED BLADDER AND KIDNEYS PRODUCING PRIMARY SYMPTOMS AND UNRECOGNIZED AS SUCH ON ACCOUNT OF MALFORMATION OF SACRUM.*

By DR. W. P. BRADBURN, New Orleans.

H. G. S., white male, aged 21, barber by trade, was seen November, 1920, complaining of inability to control urine, with marked pain whenever the bladder emptied, and with even worse control at nights than during the day. He had been wearing a urinal ever since childhood.

Family history is negative for any chronic diseases, and, particularly so for any previous congenital deformities or involvement of the nervous system. Mother and father still living and well. Five sisters and brothers living and well, the death of the only child lost was due to pneumonia, when four months old.

His previous medical history, except that referring to his present complaint, was negative except for the usual diseases of childhood. As regards the medical history of the condition which we wish to discuss, we believe that his own written account would be best included.

"My first examination was when about six months old. This examination was in regards to my feet and what then seemed to be a large growth to right of back, just above the hip. The three family doctors advised my parents to let nature have its way. So then, after it was seen that I had no control over my water, they were consulted again, but could see nothing except the spine that would cause my trouble, and they could not see anything to be done; and my peoclose examination he pronounced it nervous troubles caused from spine. So he advised me to see some orthopedic doctor, as there might be some chance of straightening my spine. But not being able to go to St. Louis, as advised, I consulted several chiropractics. They all said that my spine was the trouble, but could not say what results I would get from their treatment, as my spine was too nearly developed. I then went to a urinary specialist at Pine Bluff. I was again told that it was some nerve pinched by the spine. He then advised me to go to an orthopedic institute in St. Louis. This I did, and, after an examination without any urinary tests, they said that it was spine trouble. I then went to one of the large surgical clinics, and after going through the whole clinic, I took nearly every examination I can think of, except the kidney and bladder from the inside (meaning cystoscopic), and at the windup of all the examinations it was pronounced nervousness caused from the spine, and as to operation or any treatment, they did not advise."

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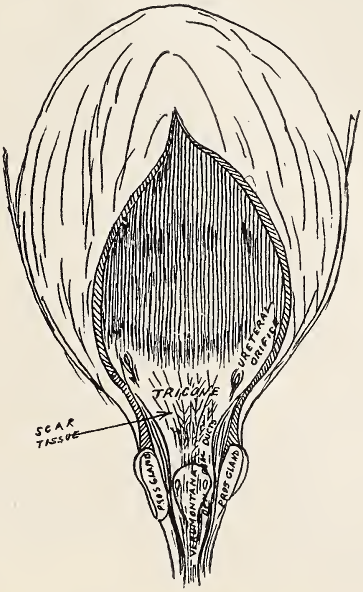
*Read before the Orleans Parish Medical Society, January 23, 1922.

Examination when first seen revealed the following: Moderately well nourished white male, about 5′ 4″ in height. Head, neck, teeth, tonsils, etc., negative. Heart, lungs, negative. Abdomen: there is no enlargement of spleen, and lower border of liver just palpable. In region of both kidneys slight suggestion of pain, notably greater on the left (he remarked here that he had had frequent attacks of pain, not very severe, however, in the region where the left kidney had been palpated, and thought it had been due to his bowels). Examination of the back was negative except in the lumbo-sacral region, where a marked curvature was noted with a decided prominence about the region of the right sacro-iliac joint, with a flattening in the region of the left. The inter-buttock fold was practically absent, until near the anus, the right buttock being larger than the left, genitalia negative. Prostate apparently increased in firmness and size, but not unusually sensitive nor otherwise abnormal. The thighs were negative. The legs showed poorly developed muscles. The feet were of the contracted type but did not interfere with walking nor were they specially noticeable when wearing his shoes. Nervous system negative, except for a more active patella reflex than is usually seen, but about equal for both the right and left sides. Examination of the urine showed it to be milky in appearance with an appreciable trace of albumen and innumerable pus cells. Stained sediment showed large numbers of gram negative bacilli and spermatazoa. Irrigations of the bladder showed a capacity of slightly over an ounce. These were continued daily at first, later lengthening the intervals and instilling a ½% protargol solution. The patient was educated to irrigate his own bladder at home with 1-5000 solution of potassium permanganate, and later boracic acid solution and normal saline solution. This he still continues. As a result of this irrigating, distending to the limit, an increase in bladder capacity was obtained until in first half of December about 4 ounces could be tolerated and further investigations were begun. The bladder now being much less irritable, we began our cystoscopic investigations. The bladder was negative except for a slight edema of the trigone with apparently scarring, giving one the idea of healed ulcerations running down towards the prostatic region. No suggestion of a median lobe was noted, but the lateral lobes suggested a slight enlargement. Withdrawing the scope still more, we were able to study the prostatic urethra, which showed a marked hypertrophy of the veru montanum, appearing under the scope to be about ¾″ in height from the urethral floor and one-half inch width at apex and slightly smaller at base. About 2/3 of the distance up from the base were noted two openings, equi-distant on either side from the median line, and into which the urethral catheter could be easily passed for about ½ cm. These were taken to be the orifices of the ejaculatory ducts. Passing again into the bladder, it was noted that the left ureteral orifice was distinctly nearer the urethral orifice than the right. Both orifices were easily entered and catheters passed with ease up to either kidney. The urine from both kidneys was cloudy, being decidedly more so on the left. Microscopic examination showed many pus cells and gram negative bacilli in both. Routine lavage of the kidneys was then begun, using at first silver nitrate 1/5% and later increasing to 1/2%, and still later to 1/2% and 1% mercurochrome.



Radiographic examinations by Drs. Samuels and Bowie during February, 1921, gave us the following: "The urinary tract shows no evidence of stone in the kidney, ureter, or bladder on either side. There is a congenital fusion of the third and fourth lumbar vertebrae, and a congenital anomaly of the sacrum and coccyx, the latter two bones being practically absent." A few days later, through their courtesy, the entire spine was examined radiographically and showed "a marked curvature of the spine in the lumbar region. Upper portion practically negative." There is a congenital abnormality, as reported previously, in the region of the sacrum and coccyx.

The improvement in the case was very evident from the beginning of the bladder irrigations and was more rapid after the lavage of the kidneys was instituted. Previous to the treatment of the bladder and kidneys, the patient was urinating practically constantly, protecting himself during the day by wearing a urinal, but at nights using a rubber sheet, etc., on the bed. His complexion was sallow, he avoided associates and would not indulge in any sports nor attend theatres, picture shows, or the like, and extremely despondent. Now, and for the past seven or eight months, he has not wet the bed at night, emptying the bladder only upon retiring and arising, and not being disturbed during the night. During the day he urinates about three or four times without pain or discomfort and is able to control to the extent that if the desire to urinate be manifested while he is waiting on his customers (either shaving or cutting hair) he can continue his work without any difficulty or discomfort other than usual, and then empty the bladder with no leakage in the meantime. He still wears the urinal, however, as a protection, as occasionally while riding in the cars a sudden jolt may allow a few drops to escape. Eventually, I fully expect him to gain complete control. His complexion is distinctly better, his attitude has changed, he enjoys pleasure, associates, and has frequently suggested picnics and the like when he was off for the day. He has gained at least fifteen pounds in weight and the development of the muscles of the legs has been decided, as well as the general increase in muscle tone and firmness throughout the body. The bladder capacity has increased to such an extent that he recently voided in my office 12 ounces without any appreciable discomfort as a result of the amount contained and there had been no leakage. Examination of the urine at present still shows pus cells but markedly reduced in number, with an occasional colon bacillus, but about the same amount of spermatozoa.

Aside from the interest that the case has from the standpoint of congenital deformity, the more important lesson to be learned is that in making a diagnosis, especially where there is a congenital abnormality, do not let the abnormality so predominate that it completely overshadows all other conditions and prevents us from further investigating along the lines that we would follow in the normal case and making the same deductions, in other words, having made a diagnosis, try to prove your own diagnosis wrong, and if unable to do so then adopt it, but let us not be too hasty in telling patients, particularly of this type, that nothing can be done, without first proving to ourselves that nothing can be done.

DISCUSSION.

Dr. E. D. Martin: There are many points of interest in this case. The distortion of the bladder and congenital malformation of the prostatic urethra were no doubt the result of impaired nerve function, which, from the evidently undeveloped sacrum, we conclude, was arrested. This, too, resulting in incontinence of urine would account for the contracted and infected bladder. With time, nerve activity improved and needed only the removal of the infection to allow better functioning, resulting in comfort and relief from a most distressing malady. Those who first saw the case were correct as to the original cause; had they gone further they would have found that the infection had become the real source of trouble, and just as a paralyzed limb is made useful by the transplant of an active muscle, so was this patient's bladder made practically normal by removing the cause which made it inactive. From the improvement gained in this case we learn a great lesson, by attention to the results of conditions we can at least give comfort to the afflicted, and Dr. Bradburn is to be congratulated for his efforts.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By DR. P. T. TALBOT, Secretary-Treasurer.

The following programs of Scientific Sections for the approaching meeting of the Louisiana State Medical Society, have been received from the various Section Chairmen:

SECTION ON MEDICINE AND THERAPEUTICS.

Introduction by the Chairman.

1. "Suggestion for Estimation of Circulatory Balance", Dr. C. P. Munday, Shreveport.
2. "Diarrhea and Disturbances of Digestive Functions", Dr. D. N. Silverman, New Orleans.
   To Open Discussion, Dr. S. K. Simon, New Orleans; Dr. Randolph Lyons, New Orleans.
3. "Report of a Well Developed Case of Tetanus, Successfully Treated with Serum", Dr. D. W. Kelly, Winnfield.
4. "Lethargic Encephalitis", with report of cases, Dr. W. S. Kerlin, Shreveport.
5. "Report of Some Interesting Cases with Exhibition of Patients", Dr. D. O. Willis, Leesville.
6. "Blood Pressure", Dr. H. Guy Riche, Baton Rouge.
   To Open Discussion, Dr. R. C. Kemp, Baton Rouge.
7. "The Treatment of Thyrotoxicosis", Dr. T. P. Lloyd, Shreveport.
8. "Treatment of Typhoid Fever", Dr. Geo. S. Bel, New Orleans.
9. "The Relation of Blood Examination to the Diagnosis of the Anaemias and the Leukemias", Dr. S. Chaille Jamison, New Orleans.
10. "Observations in the Treatment of Leukemia—with findings", Dr. E. L. Irwin, New Orleans.
    To Open Discussion, Dr. Hamilton P. Jones, New Orleans.

SECTION ON PEDIATRICS.

1. "Pylorospasm", F. J. Kinberger, M. D., New Orleans.
2. "Medical Social Service for the Childhood in Louisiana", Maud Loeber, M. D., New Orleans.
3. "The Young School Child". W. W. Butterworth, M. D., New Orleans.

SECTION ON NERVOUS AND MENTAL DISEASES.

1. "The Unusual Child", Dr. Walter J. Otis, New Orleans. Discussion opened by Dr. Henry Daspit.
2. "Failures of Adjustment and their Treatment", Dr. R. M. Van Wart, New Orleans.
3. Title to be Supplied, Drs. Clarence Pierson and Irwin Levy, Alexandria.

SECTION ON BACTERIOLOGY AND PATHOLOGY.

1. "The Leucocytic Count and Its Relation to Various Clinical Diseases", Dr. W. H. Harris.
   To Open Discussion, Dr. R. O. Simmons and Dr. W. G. Stafford.
2. "A Correlation of the Blood, Spinal Fluid, and Clinical Findings in a Number of Unselected Cases Presenting a Probable Syphilitic History", Dr. F. M. Johns.
   To Open Discussion, Drs. S. S. Holbrook and H. Daspit.
3. "Some Observations on the Schick Test, and the Toxin-Antitoxin, Immunization, in the Control of Diphtheria", Dr. W. H. Seemann.
   To Open Discussion, Drs. J. Lanford and E. Moss.

SECTION OF SURGERY.

1. "Infective Osteomyelitis in Children, with Report of Cases" Drs. J. C. Willis, Jr., and Sr., Shreveport.
   Discussion opened by Dr. C. H. Mosely, Monroe.
2. "Acute Appendicitis a Surgical Problem", Dr. P. Graffagnino, New Orleans.
   Discussion opened by Dr. G. M. Stafford, Alexandria.
3. "Nonseptic Post Operative Adhesions", Dr. I. J. Newton, Monroe.
   Discussion opened by Dr. R. Matas, New Orleans.
4. "Diagnosis and Treatment of Flatfoot", Dr. E. S. Hatch, New Orleans.
   Discussion opened by Dr. E. D. Fenner, New Orleans.
5. "When a Diseased Gall Bladder Becomes Surgical", Dr. W. B. Chamberlain, Baton Rouge.
   Discussion opened by Dr. F. W. Parham, New Orleans.
6. Surgical Trauma of Abdomen, Dr. R. O. Simmons, Alexandria.
   Discussion opened by Dr. T. H. Watkins, Lake Charles.

7. "Late Treatment of Fractures of Long Bones of Lower Extremities, Dr. J. T. O'Ferrall, New Orleans.
8. "Fracture of Both Bones of Leg", Dr. Isidore Cohn, New Orleans.
   Discussion opened by Dr. J. A. Danna, New Orleans.
9. "The Treatment of Chronic Cystic Mastitis", Dr. W. E. Sistrunk, Rochester Minn.
   Discussion opened by Dr. E. D. Martin New Orleans.
10. "Caesarean Section Under Local Anesthesia", Dr. J. A. Hendricks, Shreveport.
    Discussion opened by Dr. J. Q. Graves, Monroe.
11. "The Next Step in Surgery", Dr. E. L. Sanderson, Shreveport.
    Discussion opened by Dr. Carroll Allen, New Orleans.

SECTION ON GYNECOLOGY AND OBSTETRICS.

1. "The Importance of the History in the Diagnosis of Tubal Pregnancy", Dr. E. L. King, New Orleans.
   To open the discussion, Dr. J. C. Willis, Shreveport, Dr. E. Denegre Martin, New Orleans.
2. "Toxemia of Advanced Pregnancy", Dr. G. M. G. Stafford, Alexandria.
   To open discussion, Dr. Thomas B. Sellers, New Orleans.
3. "The Treatment of Carcinoma of the Cervix", Dr. B. C. Garrett, Shreveport.
   To open discussion, Dr. S. C. Barrow, Shreveport.
4. "Indication for Hysterectomy and Selection of the Type of Operation", Dr. Wm. D. Phillips, New Orleans.
   To open discussion, Dr. H. W. Kostmayer, New Orleans.

SECTION ON EYE, EAR, NOSE AND THROAT, INCLUDING STOMATOLOGY.

1. "Price of Neglect in Acute Supp. Otitis Media", Dr. E. R. Gandy, Alexandria.
   To open discussion, Dr John T. Crebbin, New Orleans, and Dr. I. F. Littel, Alexandria.
2. "Diagnosis of Foreign Body in the Bronchi", Dr. R. C. Lynch, New Orleans.
   To open discussion, Drs. I. H. Smith, Shreveport, and W. T. Patton, New Orleans.
3. "The Prevention of Otitis Media and Sinusitis in ac-

Coryza and Influenza'', Dr. M. P. Boebinger, New Orleans. To open discussion, Dr. Weil, New Orleans, and Dr. A. M. Peters, Alexandria.

4. ''Orbital Abscess'', Dr. John L. Scales, Shreveport. To open discussion, Drs. Arthur Whitmire and Brown Larose, New Orleans.
5. ''Eyes and Endocrines'', Dr. Chas A. Bahn, New Orleans. To open discussion, Dr. T. J. Dimitry, New Orleans, and Dr. O. B Hicks, Shreveport.

SECTION ON UROLOGY.

1. ''Non-operative Treatment of Urethral Strictures'', Dr. H. W. E. Walther, New Orleans.
2. ''Treatment of Pyelonephritis by Pelvic Lavage'', M. H. Foster, Alexandria.

SECTION ON DERMATOLOGY.

1. Title unannounced, Dr. J. N. Roussel, New Orleans. To open discussion, Dr. W. W. Smith, Shreveport.
2. ''Suggestions in the Treatment of Some of the Common Skin Diseases'', Dr. J. M. King. Professor of Dermatology Vanderbilt University, Nashville, Tenn.

SECTION ON RADIOLOGY.

1. ''Unusual Cases Showing the Value of X-ray in Diagnosis'', Dr. L. J. Williams, Baton Rouge. To open discussion, Dr. T. I. St. Martin, Houma.
2. ''The Roentgen Examination of the Chest'', Dr. Amedee Granger, New Orleans. To open discussion, Dr. Fortier, New Orleans.
3. ''Further X-ray Observations on the Appendix'', Drs. Henriques & Menville, New Orleans. To open discussion, Dr. S. C. Barrow, Shreveport.

SECTION ON PUBLIC HEALTH & SANITATION.

1. ''Typhoid from a Public Health Standpoint'', Dr. John M. Callan, New Orleans.
2. ''Some Phases of Rural Health'', Dr. Oscar Dowling, Shreveport.
3. ''The Duties of Officials Relative to Public Health'', Dr. M. W. Swords, New Orleans.
4. ''Vital Statistics'', Dr. Geo. Dempsey, New Orleans.

NEWS AND COMMENT.

Headquarters Louisiana State Medical Society Meeting. Bentley Hotel, Alexandria, La., will be headquarters for the annual meeting of the Louisiana State Medical Society, to be held in Alexandria, April 11-13. Anyone wishing special reservation may obtain same by communicating at once with Dr. Clarence Pierson, Chairman arrangement committee, Alexandria, La.

Meeting Rapides Parish Medical Society. At the annual meeting of this society, held in Alexandria, the following officers were elected for the year 1922: President, Dr. Fayette C. Ewing, Alexandria; 1st Vice-president, Dr. J. A. White, Alexandria; 2nd Vice-president, Dr. F. M. Lett, Lecompte; Secretary, Dr. S. C. Holloman, Alexandria. Committees: Arrangement: Dr. Clarence Pierson, Chairman; Program: Dr. Paul King Rand, Chairman; Finance: Dr. Marvin Cappel, Chairman. These men are all actively working toward the end of making the Rapides Society the best in the State.

Anniversary Rockefeller Institute. The twentieth anniversary of the Rockefeller Institute for Medical Research was celebrated on January 20th. Brief speeches were made by Mr. John D. Rockefeller, Jr., of the Board of Trustees, and Dr. Wm. H. Welch, of the Board of Scientific Directors.

New Medical Journal. The first issue of the *New York Medical Week,* a new publication which will be published under the auspices of the Medical Society of the County of New York, has just made its appearance. It is the organ of the society and intended to represent the activities of the medical organizations of Greater New York, and to present the trend of professional thought in New York.

New Buildings for Western Reserve University. The trustees of Western Reserve University have accepted the offer of Samuel Mather of Cleveland to pay for the construction of new medical school buildings. The cost of these new buildings is estimated at $2,500,000, and this gift together with previous ones will place Mr. Mather's gifts to the University at more than $4,000,000.

CANCER CURE OFFER OF $100,000. Lord Atholstan, proprietor of the *Montreal Star*, recently offered $100,000 to the first graduate or student of any recognized university who within five years after date of the offer discovers a medicinal cure for cancer. The decision is left to the Royal College of Physicians and Surgeons, London, England. The offer, which was made "to help in stimulating the work of research throughout the world," may be renewed.

PROF. DARIER RETIRES FROM HOSPITAL PRACTICE. By reason of having reached the age limit Prof. Darier, the distinguished Parisian dermatologist has been retired from hospital service. On the occasion of Prof. Darier's departure from the Hopital Saint Louis, he was honored by his pupils and friends with a medal and bust. Prof. Darier is the third Parisian practitioner to be retired recently from hospital service by reason of the age limit, the others being Brocq and Thibièrge.

UNITED STATES LIFE TABLES. The Department of Commerce, through the Bureau of the Census, announces that the second official publication on Life tables, derived from births, deaths, and population in this country is soon to be issued. These tables show conditions as they existed in 1890, 1901 and 1910, thus making it possible to study the changes which have taken place in mortality during two decades.

In a group of 51 cities the infant mortality rate is 74 per 1,000 births as against a rate of 90 in 1920 for 44 cities. The lowest rate, 47 per 1,000 births, appears for the cities of Portland, Oregon, St. Paul and Seattle, and the highest rate, 111, for Fall River. The greatest decrease since 1920 appears for Lowell, with a rate of 90 for 1921, against 135 for 1920.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION. The May meeting of the A. M. A., at St. Louis promises to be the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the *Journal* in December, inquiries and reservations are being received daily. The hotels and Convention Bureau are aiding the Committee in a most satisfactory and helpful way to see that the Fellows are comfortably located. The A. M. A. meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible a good fellow should double up so that no one is left without comfortable lodging. Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way write to Dr. Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis.

THE AMERICAN RELIEF ADMINISTRATION announces that although food packages are a vast help in combating famine and disease in the stricken provinces of Russia, medical supplies and clothing are likewise urgently needed. Contributions for the latter may be made to the offices of the American Relief Administration, 42 Broadway, New York.

THE ASSOCIATION FOR THE DEVELOPMENT OF MEDICAL RELATIONS of the Faculty of Medicine of Paris announces the establishment of a Bureau of Information to aid all foreign doctors and students from allied or friendly nations in any way during their sojourn at the Faculty of Medicine in Paris or in other French Universities. Moreover to meet the request of groups of doctors or students, the association is ready to organize courses of lectures on subjects suggested by the doctors or students.

DEATH OF DR. JOSEPH MACDONALD. On January 7, Dr. Joseph MacDonald, managing editor and publisher of the *American Journal of Surgery,* and co-publisher of the *Medical Pickwick,* died suddenly in his office of cerebral hemorrhage, at the age of 51. Dr. MacDonald was ex-president and, for many years secretary of the American Medical Editors Association, an organization in whose affairs he was an active and earnest factor. An officer in the Medical Reserve Corps of the U. S. Army since 1909, he was commissioned a captain upon our entrance into the world war, and, in December, 1917, a Major. A few months after his discharge from the army in 1919, he suffered a cerebral hemorrhage causing a hemiplegia, from which he recovered largely by dint of plucky perseverance—a characteristic that dominated all his activities. He was a hard worker, always genial, frank and optimistic. Dr. MacDonald had a very ''magnetic'' personality. He had a host of friends, within and without his profession, who will mourn his early death.

JOURNAL SUSPENDS PUBLICATION. The League of Red Cross Societies announces that with the completion of the present volume the *International Journal of Public Health* will be suspended. In spite of the expense of publication in several languages, it had been hoped until recently that the Journal could be continued until it should establish itself on practically a self-sustaining basis. The League, however, has now decided to consecrate its efforts and resources on the promotion of popular health instruction through the agency of the Red Cross. It will continue to publish the *Bulletin of the League of Red Cross Societies*. Efforts will be continued to resume under more favorable circumstances. Meanwhile with the present number, which completes the second volume, the publication ceases.

Income Tax In a Nut-Shell. WHO? Single persons who had an income of $1,000 or more, or gross income of $5,000 or more. Married couples who had a net income of $2,000 or more, or gross income of $5,000 or more. WHEN? March 15, 1922, is final date for filing returns and making first payments. WHERE? Collector of Internal revenue for the district in which the person lives, or has his principal place of business. HOW? Full directions on Form 1040A and Form 1040; also law and regulations. WHAT? Four per cent normal tax on taxable income up to $4,000 in excess of exemption. Eight per cent normal tax on balance of taxable income. Surtax from 1 per cent to 65 per cent on net incomes over $5,000 for the year 1921.

Court Upholds Legal Restraint of Venereally Infected Person. The Criminal Court of Appeals of Oklahoma recently rendered a decision declaring that the Health authorities had the right to restrain by arrest, etc., a person infected with venereal disease. The Court, noting that the woman was married and detained in the school for the purpose of undergoing treatment, held that the County Court of Kay County and the judge thereof had authority to commit the woman, and remanded her to the custody of the school.

Hospital Purchases New Site. Sydenham Post-Graduate Hospital has purchased at an estimated cost of $1,000,000, the block which fronts on the west side of Manhattan Ave., from West 123 to West 124 streets, extending through to Hancock Avenue, New York City. Purchase price represents outlay for new building, land and equipment. Wards will be eliminated in the new hospital, each patient whether free or paying, will have a room.

A NEW MEXICAN MEDICAL JOURNAL. Drs. A. E. Gochicoa, C. Canseco, A. Alarcon and A. Cuaron, of Tampico, Mex., have founded the *Revista Medica de Tampico,* a medical publication to be issued monthly, the first number of which has just made its appearance. The aforementioned doctors will be co-editors of the *Revista.*

PROPOSAL TO INVESTIGATE NARCOTIC SITUATION. A resolution has been presented by Representative Volk of New York to the House of Representatives asking that a committee consisting of fifteen members be appointed to investigate narcotic conditions in the United States. Traffic in narcotics, source of supply and the apparent increase in the number of addicts will be the basis of investigation.

YALE UNIVERSITY has received an anonymous gift of $100,000 for the establishment of a professorship in the medical school in honor of Dr. Wm. H. Carmalt who retired a few years ago after fifty years of distinguished service in surgery.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, Washington, announces four aditional members of the faculty as follows: Dr. Howard F. Strine, Surgeon in the U. S. Navy, Associate Professor of the Principles and Practice of Surgery; Dr. Francis M. Munson, U. S. Army, retired, Lecturer on Prevention of Diseases; Dr. Henry S. Bernton, Lecturer on Hygiene, and Dr. Jas. A. Gannon, a graduate of the medical school, class of 1906, Associate Professor of Surgery.

MME. CURIE CONSIDERED BY FRENCH ACADEMY. Drs. Becler and Quenu recently proposed the election of Madame Curie to the French Academy of Medicine. Her candidacy has the backing of a large faction but considerable opposition has arisen due to the fact that the election of a woman to the Academy would establish a precedent.

REMOVAL: Dr. A. J. Thomas, from Simsboro to Shreveport, La.

Dr. A. Mattes, from New Orleans to Martin Building, El Paso, Texas.

DIED—On February 15, Dr. J. T. Bringier, of Burnside, La., in his sixtieth year.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for January, 1922.

CAUSE.	White.	Colored.	Total
Typhoid Fever	9	1	10
Intermittent Fever (Malarial Cachexia)		3	3
Smallpox	......	......	......
Measles	......	......	......
Scarlet Fever	......	......	......
Whooping Cough	1		1
Diphtheria and Croup	3		3
Influenza	4	3	7
Cholera Nostras	......	......	......
Pyemia and Septicemia	1		1
Tuberculosis	45	32	77
Cancer	30	15	45
Rheumatism and Gout	1		1
Diabetes	5		5
Alcoholism	......	......	......
Encephalitis and Meningitis		1	1
Locomotor Ataxia	2	1	3
Congestion, Hemorrhage, Softening of Brain	25	11	36
Paralysis	5	5	10
Convulsions of Infancy	1		1
Other Diseases of Infancy	8	8	16
Tetanus	......	......	......
Other Nervous Diseases	1		1
Heart Diseases	75	42	117
Bronchitis	6	4	10
Pneumonia and Broncho-Pneumonia	33	21	54
Other Respiratory Diseases		2	2
Ulcer of Stomach	3	1	4
Other Diseases of Stomach	......	......	......
Diarrhea, Dysentery and Enteritis	13	9	22
Hernia, Intestinal Obstruction	5	2	7
Cirrhosis of Liver	4	4	8
Other Diseases of the Liver	1	1	2
Simple Peritonitis	......	......	......
Appendicitis		5	5
Bright's Disease	17	12	29
Other Genito-Urinary Diseases	14	11	25
Puerperal Diseases	4	2	6
Senile Debility	4	1	5
Suicide	7		7
Injuries	24	19	43
All Other Causes	24	29	53
Total	375	245	620

Still-born Children—White, 23; colored, 13; total, 36.

Population of City (estimated)—White, 295,000; colored, 110,000; total, 405,000.

Death rate per 1000 per annum for month—White, 15.25; colored, 26.73; total, 18.37. Non-residents excluded, 16.00.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.14
Mean temperature	56.
Total precipitation	5.22 inches

Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

COLLABORATORS:

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Vol. 74 APRIL, 1922. No. 10

EDITORIAL.

LAST CALL.

We had in mind the preparation of an editorial intended to stimulate attendance at the 1922 meeting of the State Medical Society in Alexandria on April 11, 12 and 13. We had intended to make as eloquent an appeal as it was in our power to compose when there came a communication from the Committee of Arrangements which fills the purpose so well and imparts so lucidly all necessary information that we decided we could do no better than graciously to relinquish the pleasure and yield the space to the Committee. Hence, we beg your earnest attention to the following and suggest, dear readers, that you respond in due time and in the proper spirit.

GREETINGS FROM ALEXANDRIA!

Are you coming to the State Medical Convention which is scheduled to meet in our city on April 11th, 12th and 13th? We are expecting you, and are planning our entertainment with that expectation in view. You will miss a good thing if you fail us, and we shall suffer a great disappointment. Scientifically alone, this Convention promises to be worth every fellow's time and money, and judging from whispers from the State Headquarters this is to be the big State Convention of medical history. But we are not going to be satisfied with science alone; we have made some jolly good plans for the social entertainment of all those who enter the portals of this beautiful little hub city.

The splendidly appointed Hotel Bentley will be Convention Headquarters. There is ample room at the Hotel Bentley for whoever will come, but the other hotels are ready for you, too. At the Bentley you will find the Registration Desk, Information Bureau, Commercial Exhibits, Scientific Exhibits, etc. It is there also that a big membership banquet will be held on the last night of the convention, in the famous Italian Hall. Some of the committees will find meeting places there, and on Tuesday night an informal reception, including the ladies, will be held there.

The Chamber of Commerce is behind this Convention, and the House of Delegates will be given possession of their auditorium. The City Hall Auditorium will be the general assembly hall for Convention meetings, and all three of these places are within one central square.

Luncheons are being planned for members and ladies, at various places, prominent among them being the Baptist Hospital, the Louisiana Hospital for the Insane and the United States Public Health Service Hospital No. 27 at Camp Stafford. Last but by no means least is a luncheon on Wednesday at Hot Wells, Louisiana's Health Resort, where the afternoon session will be held, with a return drive by the Country Club, where the ladies will be having an afternoon tea, and back in time for the President's address and annual oration at the Rapides Theatre at 8 o'clock that night.

The various social clubs of Alexandria are throwing wide open their doors for the wearers of State Medical Convention badges, and no other card will be required. Be sure to get your badge when you register.

Make your hotel reservations early, through Dr. Clarence Pierson, Chairman of the Arrangement Committee, and avoid having to take second choice.

An efficient transportation committee has charge of automobile service, parking and transporting, and ample provision will be made for conveyance to and from luncheons, for automobile rides, etc.

This is your official invitation from the Rapides Parish Society to be on hand and get your share of the benefit to be derived from this meeting.

ARCHIVES OF OCCUPATIONAL THERAPY.

We are in receipt of the first number of the above-named publication, which will be published henceforth as a bi-monthly by Wilkins and Wilkins Co., of Baltimore, and will be edited by Wm. R. Dunton, Jr., M. D., of the Sheppard and Enoch Pratt Hospital, Towson, Md., in association with several physicians and laymen specially interested in occupational therapy. The proceedings of the American Occupational Therapy Association will appear in the *Archives* and it is hoped that the latter will serve as international archives and a central organ for the publication of papers on occupational therapy, a subject which is receiving increasing attention.

As with all the Wilkins periodicals, this leaves nothing to be desired from the typographic side or the make-up and the journal should prove interesting not only to occupational therapists, but to the practitioner who wishes to keep well-informed.

ORIGINAL ARTICLES.

(No paper published or to be publisheed in any other medical journal will be accepted for this deparment. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expeceted to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

CONSERVATION OF THE GALL BLADDER.*

By F. W. PARHAM, M. D., New Orleans.

For a long time I have been impressed by the reflection that the profession is going too fast in the routine sacrifice of the gall bladder. For years there has been a growing tendency to remove it where the symptoms point to it as the seat of trouble and the condition of the patient as a surgical risk does not contraindicate.

It is interesting to note the change of opinion in the last ten, nay, even five years. Even the same men have published at different periods diametrically opposite views. One surgeon of unsurpassed experience and keen surgical judgment said in 1913: "Cholecystostomy is the operation of choice because it saves this valuable organ for future function," but in 1921 he reverses his position and writes: "Cholecystectomy has taken the place, to a large extent, of cholecystostomy because of the well-known fact that the gall bladder following cholecystostomy is a liability rather than an asset to the patient." Mayo-Robson, too, protested against the indiscriminate removal of the gall bladder, asserting that cholecystostomy is "unquestionably the operation to be aimed at in the greater number of cases of cholelithiasis," and Sir Berkley Moynihan said, "the majority of surgeons will agree with Maurice Richardson that 'the end-results in cholecystostomy are certainly as gratifying as end-results have ever been in any class of abdominal operations'."

I wish to acknowledge in the outset that the prevalent practice among the best surgeons of today is to remove the gall bladder and not to drain. Most adopt the view, now so well established in appendicitis, that the diagnosis once definitely determined on, calls for ablation of the gall bladder.

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*Read before the Orleans Parish Medical Society, February 13, 1922.

In approaching this controversy I desire to adopt the attitude of the principal character in a recent novel much in vogue, who was much criticized for having no convictions, because, forsooth, he was able to understand the reasons actuating those on the other side of a question. I shall attempt to state clearly the reasons urged by those favoring cholecystectomy and then give as fairly as I may the other side of the question.

The employment of the expression "universal cholecystectomy" seems on first thought to be unfair, but I contend that if some gall bladders I have seen removed have been rightly removed, then there is no reason why any gall bladder, like any appendix, once in the hand, should not be taken out, provided only the patient can stand the operation. I shall try to set forth without exaggeration the grounds for this practice.

It has been shown that cholecystitis is dependent upon an infection introduced most frequently through the portal channel, and in nearly all cases there is an associated hepatitis. The clinical observations of many surgeons and the experimental work on dogs of Evarts Graham, confirmed by sections of the liver in the course of surgical operations, demonstrate this to our satisfaction. The claim is made that, however originated, the infection becomes finally lodged in the gall bladder and that from this source all troubles associated with our biliary apparatus arise.

The gall bladder becomes a menace to the liver and pancreas through its lymphatic connections, as long as the diseased viscus remains, for they assert that there is no method of treatment, which respects the gall bladder, that can get rid of the infection once planted in its walls. They believe that the liver and pancreas will take care of their infection if no further infection is added from the gall bladder. They contend, then, that the essential factor is the infection of the wall of this viscus, calculous formation being an accessory product of inflammation in about 75% of cases (Jacobson) and the persistence of this infection is the cause of the recurrence of trouble, which usually resembles closely the original attack. The assertion that drainage cannot cure cholecystitis is based upon such investigations as those of Aschaff and Bacmeister, which showed that the glands of Luschka are in reality epithelial-lined clefts or crypts in the gall bladder wall, which under infection become greatly dilated, deepened and tortuous and filled with bacteria and the products of inflammation (Jacobson). This reinfection from the gall bladder furnishes an explanation of the recurrences and complications. It was natural to conclude that the only logical way of forestalling such evils was to follow strictly the old Mosaic law and pluck out the offending member. The wisdom of this course, it is claimed by its advocates, is shown by the experience of surgeons of the widest experience, who assert that they have never seen any detrimental results following, either recently or remotely, the extirpation of the gall bladder. For example, patients observed in the Mayo clinic, it is stated, for fifteen years have suffered no special discomfort or disability. The argument is further strengthened by a reference to comparative anatomy, for the gall bladder is not found in all mammals, notably in the horse, which has only a single common duct, emptying with the pancreatic duct by one orifice into the duodenum, yet this animal, which has been much studied by veterinarians, has to show in literature only one case of pancreatitis, not the result of direct injury, and suffers no inconvenience that could be attributed to absence of the gall bladder.

It is argued that the gall bladder cannot be a reservoir, owing to its small capacity compared with the amount of bile secreted, but is rather a diverticulum, with a duct only one-eighth of an inch in diameter, thus favoring stagnation. (I should remark here that Evarts Graham, in his experiments on dogs, found he could not infect the gall bladders until he had tied the cystic duct.) It is worthy of further remark that most organisms can be cultivated in the normal contents, bile and mucus, of the gall bladder. In the liver, under normal conditions, the bacteria brought by the portal vein, are destroyed, but when conditions of stasis arise in the biliary apparatus, and particularly the gall bladder, the infectious organisms multiply and become virulent. The only hope of relief then lies in extirpation. The liver and pancreas are too important to be removed, but the gall bladder can be and should be, in spite of the conclusion reached by Evarts Graham in his latest work, that the liver is the primary seat of the infection.

A further argument in favor of cholecystectomy as the operation of choice is that when the gall bladder is removed the ducts dilate as a compensation for its loss. Some even assert that if the cystic duct is not completely removed, it will dilate and the old trouble may return as a result of its dilation and conversion into another sac, in which the infection may persist.

Now, let us look dispassionately at the other side.

I assert, first, that the gall bladder should not be placed in the same category as the appendix; it is not a vestigial organ and should be preserved whenever it can be restored to useful function. Robert Morris, that quaint surgical philosopher, in discussing the propriety of cholecystectomy without drainage, the operation now coming into vogue, places the cystic duct in evolutionary development between the Fallopian tubes and the appendix. The appendix may be ligated without fear, because nature is through with it and will ultimately cast it off; the Fallopian tubes may be tied and even cut and yet pregnancy sometimes supervenes, a lesson that shows they are too important to be merely tampered with, whilst as to the cystic duct, nature is in doubt, as she is not yet through with it, hence the surgeon must not wonder if a cystic duct may not occasionally leak after ligation. Howell, in his last edition, states that the gall bladder is a ''back-water'' and that no bile flows into the duodenum when the stomach is empty. W. J. Mayo insists that it cannot be a reservoir on account of its limited capacity, but thinks it a safety valve interposed in the biliary system to relieve tension. I believe it to be both, for when the common duct is obstructed there is immediately a great increase of tension. The simplest statement of its function is, that it is intended as an intermittent reservoir for an alkaline fluid needed in the duodenum to assist the pancreatic digestion when the acid chyme is poured out from the stomach. Whether we accept the beautiful theory of Meltzer of contrary innervation, whereby the spinchter of Oddi is made to relax simultaneously with the contraction of the gall bladder under the stimulus of certain foods, it is incumbent upon those who deny it to furnish us a more satisfying explanation of its presence. The storage function receives support from the recent experimental work of McMaster and Rous of the Rockefeller Institute, showing the marvelous inspissating power of the gall bladder on the bile, whereby the capacity of the gall bladder is virtually enormously increased. This function becomes manifest when, for any reason, there is a delay in the ordinary physiologic stimulus of food coming from the stomach into the duodenum, the loss of the watery element, permitting the continuous outflow from the liver without raising the tension unduly. This function is not possessed by the ducts, for as shown by their experiments, when the gall bladder is gone and the ducts obstructed there is an increase of the watery element, and "white bile" is produced.

In the absence of the gall bladder, then, the tension must increase until the sphincter of Oddi gives way, when there is a continuous flow of bile into the duodenum, often showing as pure bile in the stools, certainly not a normal event. Furthermore, Mayo Robson, Flexner and others have shown that the gall bladder alone secretes mucus, which is protective of the pancreas, which would consequently be affected injuriously by the introduction of bile in the absence of a gall bladder. The restriction of these two functions to the gall bladder is at least very significant.

Coming, now, to the core of the matter. As to the persistence of infection when once planted in the gall bladder and the impossibility of removing it by drainage, I would first direct your attention to the fact that in every case the infection has a beginning, which keener diagnostic methods must discover, when the simpler and physiologic drainage might suffice. Allowed to progress to the stage of destructive pathology, only extirpation could help. A significant observation is that of Murat Willis: "It is, indeed, surprising to what extent the apparently hopelessly involved gall bladder will recover at least a part of its functional ability following cholecystostomy." It besides affords in severe cases the opportunity of doing a successful cholecystectomy. While not asserting in such cases that drainage is the procedure of choice, I believe its effect does indicate the probability in less advanced stages of accomplishing a cure.
Admitting with Evarts Graham that there is always associated hepatitis, are we sure that drainage may not relieve not only the gall bladder infection but that of the liver as well? On the other hand, if he is right in his last contention that the hepatitis is primary, is it at all certain that removal of the gall bladder will relieve the whole condition? Will not this observa-

tion explain the residual infection of the ducts after cholecystectomy, and requiring further operative search? And do we not know that with the gall bladder out the difficulty of finding the trouble is much increased? Shall the gall bladder be routinely sacrificed in order to prevent pancreatitis when drainage would suffice?

How great the surgeon's embarassment when, in the presence of serious duct pathology, he finds himself deprived of the happy resort to cholecystenterostomy, because, unfortunately, the gall bladder had been removed!

Does not this growing predilection for removal of the gall bladder warp surgical judgment and lead, then, to the useless sacrifice of gall bladders that might be saved?

Murat Willis, calling attention to the report of 397 operations for gall bladder trouble in Peter Bent Brigham Hospital, in which only fifty were non-calculous, deplores the fact that of these fifty, sixteen were normal gall bladders, so that one patient out of three subjected to cholecystectomy for "simple cholecystitis parted with a normal gall bladder," the failure of the patient to obtain relief "confirming the belief that the diagnosis of cholecystitis was a faulty one."

Even the argument from comparative anatomy falls to the ground, for while the horse has no gall bladder, the ox, the dog, the pig and the cat have. A word should be said here concerning the ideal cholecystotomy recently advocated by Willis, in which the gall bladder is opened and examined and then closed by suture without external drainage, the idea being to prevent the occurrence of crippling adhesions by avoiding drainage of any sort.

I wish also to make a plea for the preliminary trial of duodenal drainage as proposed by Lyon for diagnostic and therapeutic purposes before subjecting the patient to surgical operation. In spite of the iconoclastic work of Anthony Bassler and others recently published, in which they confidently assert they have knocked down all of Lyon's five idols, and call upon all worshippers at his shrine to abandon his cult, I am constrained to hold with Smithers and other competent gastroenterologists that Lyon's clinical results remain and cannot yet be discarded.

To those who believe the gall bladder is a useless organ I commend the words of McMaster and Rous: ''The fact that few ills follow upon removal of the normal gall bladder means merely that the body has adapted itself to the loss, not that the loss is unimportant. In this connection the surgeon would do well to remember that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation.''

Finally, instead of saying, then, that the gall bladder should always be removed, except when contraindicated by the operative risk, I desire to reverse the formula and say, the gall bladder should only be removed on account of definite crippling pathology which will preclude restoration to useful function, for the removal of the gall bladder changes physiological relations, which should never be done without adequate reason. From the time of Sir William Ferguson conservative surgery has had a recognized place, and our striving should be to prevent unnecessary mutilation. Other organs, too, have been removed without apparent detriment, but such removal without imperative demand is crippling and should be discountenanced.

DISCUSSION.

Dr. Urban Maes: The subject which Dr. Parham has chosen for his essay is certainly one of live interest, and while many of the points under discussion have been settled in the minds of many of us, there are still some factors which must be discussed from different angles. Conservation of the gall bladder in the surgical diseases of that organ must be discussed from four points of view:

First. The function of the gall bladder and whether or not it is a necessary organ.

Second. The pathology of the gall bladder and the clinical evidences of disease which are seen when the abdomen is opened.

Third. The patient: i. e., his fitness as a surgical risk.

Fourth. The end results after a period of time.

While much work has been done to ascertain the function of the gall bladder, we are still a little uncertain as to its being an essential organ. Clinically the pressure-regulating mechanism seems definitely established and as shown by Mann, the dilatation of the ducts after removal of the gall bladder can care for this part of the physiology of the biliary apparatus and makes removal of the gall bladder a physiologically safe operation.

The evidences of disease of the gall bladder wall which we see on opening the abdomen are changes in color of the organ, changes in the thickness and elasticity of its walls; adhesions; the presence of glands along the common duct and fat deposits in the gall bladder wall. If these changes are present and the patient's condition will permit, certainly the end results of cholecystectomy will be better than after cholecystostomy. In a thin-walled gall bladder with stone, drainage may suffice, but in diseased gall bladders with no stone, relief from symptoms is only temporary. In patients with jaundice drainage is the preferred operation.

Patients with gall bladder disease are often fair, fat and well beyond 40 and may be bad risks. In such patients the time element is an important factor if only from the amount of anaesthetic used. Greater speed and fewer manipulations in the upper abdomen are certainly desirable. Secondary operations are much more frequent after simple drainage and if there is only slight gall bladder disease, drained patients are always worse after operation than before. If we find a functioning gall bladder at the second operation it is usually in those cases where stone was present or there was very little disease of the gall bladder wall. There are occasions when it may be best to perform the ideal cholecystotomy of Murat Willis.

End results and immediate post-operative recovery seem to me to have been best in those patients where I have removed the gall bladder and closed the abdomen without drainage, after the suggestion made by Richter and Buchbinder, who report a recent series of 100 cholecystectomies with two deaths, one from pneumonia and one in a patient who had cirrhosis of the liver.

In a recent report of 100 cholecystectomies by Sir Gilbert Barling, he concludes:

1. That it is doubtful if the gall bladder is ever freed of infection by drainage.
2. Removal of the gall bladder rather than drainage should be a routine procedure.
3. Easier and safer recovery follows.

We all know the adhesions that form from a bile-soaked drain. Deaver claims that 65% recurrences have been prevented by removal of the gall bladder, and Moore, in the July, 1921, number of Surgery, Gynecology and Obstetrics, notes that the average period of relief after cholecystostomy has been 8 or 9 months, while those patients with their gall bladder removed have remained well 2½ years. Jaundiced patients should always be drained. My best results in my own work have been in the patients where the gall bladder was removed and the abdomen was completely closed without drainage.

Dr. I. I. Lemann: Where there is so much disagreement amongst surgeons as to the relative advantages of the two operations, a mere internist must confess himself still more confused and undecided.

Certainly we see patients whose gall bladder have been drained, but who have not been relieved, return to have the gall bladder removed; but we also see patients who, after the second operation, are still not relieved. The question even arises whether the diagnosis of gall bladder disease as the cause of the symptoms had been warranted.

The situation reminds one as being somewhat analogous to that of "pyloric ulcer," where the debate still goes on between men of Sippy's school, who contend that patients whom surgeons claim to have cured by gastro-enterotomy, come to them later, on account of recurrence of their symptoms; and, on the other hand, the surgeons who claim that they must later operate on the patients supposed to have been cured by medical methods.

As to the Lyon-Melzer Gall Bladder Tap and its usefulness as a therapeutic measure, I must say that after a trial of a couple of years I still have an open mind. I am not altogether convinced of its value. I have seen a few cases benefited—many not benefited. Perhaps I may not have been sufficiently persistent or perhaps my patients have not been properly chosen.

I do not think we can base any diagnosis on the presence or absence of epithelial cells, leucocytes, blood cells and bacteria in the material obtained by the Lyon Tap, for I have not been able to correlate gall bladder disease with any of these findings.

Dr. J. A. Danna: The subject matter, from the standpoint of pathology and of whether or not to remove the gall bladder, has been thoroughly covered. The problem we have to face is to know in each case what to do to get the patient well. I have not yet learned to tell at a glance, after opening the abdomen, the kind of a case on which to do a cholecystectomy from the one on which to do a cholecystostomy. You may have the most violent reaction, with empyema of a tense gall bladder which may even show spots of gangrene, all due to simple obstruction by a small stone, which will entirely clear up on removal of the stone and drainage. In some of these cases where I have gone in two or three months later expecting to remove a muchly-diseased gall bladder, I found that it was perfectly normal to all appearances.

But cholecystostomy and cholecystectomy together do not cover the entire field of action in the surgery of the biliary tract. Where the disease is not in the gall bladder or cystic duct, neither cholecystostomy nor cholecystectomy can give you any relief. Drainage from a cholecystostomy is usually but a matter of six to ten days, and removal of the gall bladder will certainly not clear any condition causing common duct obstruction. Dr. Parham mentions cholecystenterostomy rather casually. I believe cholecystenterostomy has a distinct field of application and if it were considered and employed in many cases where cholecystostomy or cholecystectomy is done, many of the cases that we do not relieve by either of these operations and that fall into the hands of the gastro-enterologist would be cured, and the gastro-enterologist would have a much smaller percentage of our cases to cure after we have failed with surgery.

Dr. A. L. Levin: I wish to emphasize a point which was not brought out yet in the discussion of Dr. Parham's very valuable paper. Many investigators, among them Fravel, in 1916, have demonstrated the fact that the gall bladder is a very important factor in the production of the proper quantity and quality of hydrochloric acid in the gastric secretion. Fravel analyzed the gastric acidity in a number of normal dogs; then he removed the gall bladder of those animals and again analyzed their gastric acidity. He found in all but two a marked subacidity and in the two there was an achylia gastrica. His conclusion from this lesson was that in gall bladder disease we should find a subacidity. If we find a hyperchlorrhydria it is due to irritation from another cause. In my gastro-intestinal work for a number of years my observations led me to believe that in the majority of cases of chronic cholecystitis beyond repair, we find a subacidity or an achylia, whereas in those cases where the gall bladder is evidently capable of regeneration I found a normal gastric acidity or a hyperchlorrhydria. Fravel's observations are, in my opinion, worthy of consideration.

The point that I wish to bring out tonight is that the surgeon can often make use of the above observation of the gastric acid curve as a guide in a given doubtful case of chronic cholecystitis to do a cholecystectomy or be satisfied with a cholecystostomy. The subject is of the greatest interest to all of us and our friend, Dr. Parham, deserves a great deal of credit for stressing the point in his paper not to practice the sacrificial ritual on the diseased gall bladder on a wholesale scale.

Dr. Parham (closing): I have little to add because I have said pretty much what I wanted to say in my paper. My paper was a plea for conservative treatment of the gall bladder. I do not believe that the gall bladder should be taken out because we find nothing else to do. In certain cases the symptoms all point to the gall bladder, but the gall bladder does not appear to be much at fault when the abdomen is opened. In such cases we are not justified in taking out, or even in draining, the gall bladder until we have made a careful search in the abdominal cavity and are able to eliminate every other possible explanation of the symptoms. I want to emphasize the statement that, however difficult it may be to discover, even with the abdomen open, the evidence of intrinsic disease of the gall bladder, we must make ourselves sure that there is nothing else to account for the condition before we can hold the gall bladder to blame. A gall bladder that looks bluish, is soft and easily emptied by light pressure and shows no evidence of enlarged glands or adhesions about it, is a gall bladder that should certainly not be removed, and we should only drain when the symptoms point clearly to it as the cause of trouble. I believe frequently our relapses may be due to failure to drain the gall bladder long enough. Finally, I would say, as I said in the paper, that, instead of saying every gall bladder should be removed except in the case where the condition of the patient does not permit, rather, every gall bladder should be saved when a careful examination would seem to indicate that it can be restored to health.

JUVENILE DEFORMING OSTEOCHONDRITIS, WITH REPORT OF CASES.*

By E. D. FENNER, M. D.

My first personal contact with this interesting disease of the hip, which was only recognized as a pathological entity in 1910, was in 1907, when I was called upon to treat a lad of 4½ years for what I then believed to be Tubercular Hip Disease. Throughout my observation of this child, which continued over a period of two years, I was amazed at the mildness and benign course of the clinical symptoms, which terminated in a complete recovery with practically normal function of the joint, in spite of the fact that the skiagraphs revealed a very startling absorption (destruction) of the entire head of the femur. The absence of any evidences of suppuration, in the face of the skiagraphic evidence of severe destruction of the bone, led me to record the process as a "dry caries"—"*caries sicca,*" which was a term I had often seen in works on hip disease, but in regard to the characteristics of which I had a very hazy notion indeed.

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*Read before the Orleans Parish Medical Society, February 13th, 1922.

There can be no doubt that this lad, the first case in my series, was suffering from what is now known as Juvenile Deforming Osteochondritis.

Little is to be gained by entering into a discussion of the merits of the rival claims to priority in recognizing the disorder. It is clearly established that in 1909, Legg, of Boston; Calvé, of France; Waldenström, of Sweden, and Perthes, of Tübingen, each independently noted that there occurred now and then cases of supposed Hip Disease, which differed in many respects from the ordinary form. It is equally well established that Legg, on the 17th of February, 1910, published the first account of the disorder, under the title of "An Obscure Affection of the Hip." On July 10, 1910, Calvé published a memoir in the *Revue de Chirurgie,* recording ten observations upon "A special variety of pseudo-coxalgia, grafted upon characteristic deformations of the superior extremity of the femur." It was not until 1913 that Perthes presented the new-born disease at the baptismal font, and proposed to call it "Deforming Osteochondritis of the Superior Extremity of the Femur." In spite of these undisputed facts, as Albee remarks in his Reconstructive Surgery, "With a perversity not uncommon in medical annals, this affection is most commonly denominated 'Perthes' Disease'." H. L. Taylor has written upon the subject under the title of "Quiet Hip Disease," and in addition to the eponymic association of the names of Legg, Calvé and Perthes, it has been proposed to substitute the term Coxa Plana, as indicating more clearly the usual appearances of the femoral head.

The clinical history of these cases is very characteristic. A male child, since the affection is far more common in boys than in girls, between the ages of four and ten years, begins to limp. There is evidently slight flexion and abduction of the hip, and more or less pain and tenderness in connection with it. The progress of the disorder is gradual; the limping, the pain, and the stiffness of the hip are never severe; and "night cries" are the exception rather than the rule. Deformity of attitude at the hip is seldom severe, and the child's general health and activity are very little impaired. Indeed, the activity of the child is in striking contrast to the persistence of the lameness. After these symptoms have continued for several weeks or months, the child is brought for examination for suspected Hip Disease. At the examination the surgeon finds all the evidences of very benign Hip Disease. There is some deviation of the hip, usually a slight flexion and abduction, but the deformity is seldom serious. Some induration in the groin is apt to be detected, and there may be slight atrophy of the muscles of the thigh. Mobility is restricted in all directions, but only towards the extremes of normal movement. Muscular resistance is not encountered until the limb is carried toward the limit of normal motion, and the pain caused by these manipulations is relatively slight. One is immediately surprised that the subjective symptoms are so mild, considering the duration and persistence of the physical signs of hip trouble. An X-ray picture will show bone changes apparently out of all proportion to the mildness of the symptoms. Abscess formation practically never occurs in these cases, and after from 12 to 18 months the symptoms have, as a rule, so completely abated that the case is discharged as cured.

The pathological changes in the bone are very striking. They are chiefly found in the head and neck of the femur, and appear to consist in a mild inflammation of the cartilage and bone, with absorption and decided diminution in density. In the average case the head of the femur loses its somewhat globular shape, and is thinned down to a narrow, flattened disc; not infrequently it is striated, and appears to be split up into several small fragments; and as the disease progresses the femoral head may almost entirely disappear. In certain cases the head of the femur, instead of being absorbed and thinned out in this way, appears to be softened and mushroomed down over the neck of the femur. Along with these changes in the head of the femur there are not infrequently seen areas of transparency in the femoral neck like vacuoles. Some observers have claimed that the whole innominate bone participates to some extent in the atrophic process so strikingly shown in the upper end of the femur, and that similar atrophy may be detected in the substance of the femoral shaft. As time goes on the atrophy is succeeded by a proliferation, and an increase in density which seems to correspond to the eburnation seen in Rickets, and in cases which seem to have entirely recovered there may be seen a decided thickening of the neck of the femur. In cases submitted to skiagraph examination a year or more after the onset of the disease it is often found that the femoral neck is bent downwards so as to produce a Coxa Vara. In these cases measurement will reveal slight shortening of the limb, with prominence of the trochanter, which is elevated above Nelaton's line. As a result of these changes, slight lameness may be permanent, but the mobility of the hip is very little impaired, and the patient's activity is little interfered with. It is remarkable how trivial is the functional disability after recovery in the majority of cases.

Since the original communications of Legg, Calvé, and Perthes, a very considerable literature upon this hitherto unrecognized disease has accumulated. Authors differ very little in their description of the symptomatology, the skiagraph bone changes, and the clinical course of the disorder, but in regard to its etiology and nature there has been considerable discussion. All are agreed that it is much more common in boys than in girls, and that it develops in children between the ages of 4 and 11. Traumatism, generally of a trivial character, is nearly always recognized as an etiological factor. Schwartz, Calvé, and Eden, have noted a *familial* tendency, but their observations do not appear to have been confirmed by others. P. W. Roberts, basing his opinion upon a few cases observed by him, considers that tardy hereditary syphilis may be the explanation. Freiberg, and a number of others, believes that it is a mild infectious process. F. C. Kidner, finding that the X-ray picture in one of his cases exhibited a vacuole in the femoral neck close to the epiphyseal line, which resembled a possible circumscribed abscess of the bone, tunneled in the axis of the neck with a drill, and curetted from the small cavity into which the point of the drill seemed to have penetrated some soft grayish material which was found to contain numbers of sluggish staphylococcus aureous. As a result of this experience he concludes that the process may be a mild, low grade inflammation due to the staphylococcus aureous. Froelich, Mouchet, and Ill, have suggested that there may be an identity between Osteochondritis and Juvenile Arthritis Deformans. Finally, Calot has asserted that Osteochondritis Deformans does not exist at all, but that these cases are nothing but "an undeveloped stage, a rough draft of a larval congenital dislocation of the hip." In the vast majority of cases the disease is unilateral, but one or two instances, as in my own last case, of bilateral involvement have been recorded, and in a recent paper Perthes has mentioned the possibility that a similar process may be seen in the vertebrae. Moreover, the resemblance of the bone changes seen in Coxa Plana to those found in Kohler's Disease of the Tarsal Scaphoid introduces a new element of uncertainty in the etiology.

The above rapid sketch of the opinions in regard to the etiology and nature of Osteochondritis leads us around the circle back to a confession that its true etiology is still a riddle.

Treatment involves a consideration of the possible etiological relation of hereditary syphilis, in regard to which it must be borne in mind that the majority of observers, myself included, have not been able to find either a positive Wassermann, or any other clinical evidences of syphilitic infection. In doubtful cases a course of anti-syphilitic medication could certainly do no harm. An effort to clean out an infectious focus, as suggested, and practiced in one case, by Kidner, may be justified where the skiagraph presents the appearances of a localized bone abscess. And lastly, the protection of the softened bony tissues of the femur from friction and pressure meets the approval of nearly all writers who have reported cases.

In spite of the benign termination of even untreated cases, common sense. and under its guidance the weight of opinion of all writers, indicates the advisability of protecting the hip during the active period of the disease. There is some difference of opinion as to whether simple fixation of the hip by a plaster of Paris spica—the functional weight-bearing method of Lorenz for ordinary hip disease—is in itself sufficient, or whether it is not wiser not only to immobilize the hip, but also to prohibit weight-bearing. Wallace Blanchard (Jr. A. M. A., Sept. 29, 1917.) concludes that: "The femoral head which continues in functional use becomes obliterated, in whole or in part, by the attrition of weight-bearing on the softened bone. If it is protected this is reduced. In convalescence the destroyed head redevelops rapidly under protection, much less rapidly without it. The disease progresses for about a year, and then has two or three years of re-development and of increase in bone density."

Whether simple fixation with weight-bearing, as by a short plaster spica, is to be permitted is therefore an open question, but it is apt to be the method adopted by most orthopedic surgeons. In the acute stage, with fairly active symptoms, prohibition of weight-bearing would appear to be wise; in milder cases, and in those which have already existed for six or seven months, the short spica may be sufficient.

The following histories illustrate, not only the ordinary clinical course, but by the skiagraphs the evolution of the bone changes. Practically every type which has been described in the literature is here represented.

Case 1. Paul S———., four and one-half years old, was brought to me on April 25, 1907. He is the second of three children. One is a girl of five and three-quarter years, and the other a boy of eighteen months. They are both robust. The mother and father are both in excellent health. No tuberculosis in either family as far as they know. No history of syphilitic infection on either side. The boy has always been healthy. The present trouble began with a limp seven or eight months ago. It was worse when he first got up, and passed off after he had been running around. He had weeks when the limp disappeared entirely, and he has never complained of very severe pain. There has been a little complaint of soreness in the front of the thigh of the left limb. To mere inspection there is no noticeable deformity. The limb can be flexed quite freely, but in right angle flexion, passive abduction causes muscular resistance and complaint of some pain. Abduction is also impaired, and with the patient on his face, there is decided impairment of hyperextention. Rotation of the flexed femur is reduced and slightly painful. There is some atrophy of the left thigh. The circumference of the right thigh at the perineum is 11½ inches; of the left 10¾ inches. Just above the knee the measurements are: right limb, 8¼ inches; left, 7⅞ inches. The calves are about equal in size. Excellent skiagraphs show remarkable absorption and thinning of the femoral head. Diagnosis: Mild tuberculosis of the hip. The absence of pain is very striking in this case.

On April 28 a short spica applied and patient allowed to return to his home.

June 2, 1907. Paul comes back for a new spica. He has had no pain or discomfort, has run about actively, and has slept well. A new spica applied after skiagraph had been taken.

August 11, 1907. Paul has been doing well, no pain; no night cries. New spica applied.

December 29, 1907. The boy is looking splendidly, he has had no pain or distress of any kind, and his spica has been perfectly comfortable. Skiagraphs taken today show a gradual advance in the absorption of the femoral neck. There is no indication of pus formation. The mobility of the hip seems about the same as at previous examinations. A new spica is put on and he is allowed to go home.

May 31, 1908. Paul is brought in today in splendid physical condition. The cast which was applied on December 29 is still strong and comfortable. He has had no pain or discomfort of any sort. New skiagraphs show only a slight increase in the bony destruction. A new spica is applied.

February 28, 1909. Paul is in fine shape. New skiagraph, and new spica put on, which is to be removed in a few months when he is to be discharged from treatment.

June 25, 1914.

Case 2. Elbert G———, age 11 years. This lad began to complain of "soreness in his hip" about two years ago. No one realized, however, that there was anything serious wrong till about a year ago. Then he began to have considerable pain, and limped a good deal. It was not, however, till September 26, 1913, that any treatment was instituted. Then a plaster spica was applied under an anaesthetic, owing to the fact that the limb was "so much drawn." He comes down here without any cast, which has been off for four days. He has not had much pain. Motion is only moderately restricted. Flexion is possible to at least a right angle. Rotation is limited. Abduction and adduction restricted. There is no real shortening and only about ½ inch of apparent shortening. The position is one of moderate adduction, with practically no flexion. A good skiagraph shows thickening of the femoral neck, considerable destruction of the head, and some enlargement of the acetabulum. No sign of abscess. It seems to be a "Caries Sicca." I put on a good short spica.

August 2, 1914. Boy has had no trouble of any kind. I find the hip pretty freely movable, and painless. X-ray taken. New spica.

February 6, 1915. The boy comes in today with the cast in good condition. Skiagraphs taken. New spica.

April 11, 1916. Elbert has had no discomfort of any kind with the hip for a long time. I remove the spica today. X-ray picture taken. Motion tolerably free and entirely painless. The case appears to me to have been an example of Perthes' Disease. I let him go home without the support.

Case 3. December 16, 1914. Harold B———, age 8 years. This boy gives a history of a fall from steps six months ago, hurting his hip. Was not very badly hurt, and not laid up as a consequence. Stopped limping in a few days. For the past two or three months he has been complaining more or less of pain in the left hip, accompanied with a limp when walking. This has gotten decidedly worse during the past few weeks and he has also suffered with "night cries" during this time. He has had no fever at any time, nor has he been restricted in his daily activities.

Case 4. August 5, 1915. Roosevelt D———, age 13 years. This is a very large, heavy boy for his age. He limps badly in the right limb. F. H. negative. Has had no sickness. About a year ago he began to limp, but it was not till about six months ago that he began to have pain, which was referred to his knee. This has grown steadily worse, and is now pretty constant, keeping him awake at night. He says that it pains him to move either the hip or the knee. Tonsils are small and do not appear to be diseased. Skiagraph taken for me by Henriques. Hip spica applied, which gave much relief.

September 10, 1915. Letter to father requesting that he be sent down as soon as possible.

December 10, 1915. New spica applied today.

May 8, 1916. The boy comes in with the spica broken all to pieces. Evidently it has been giving no support or fixation for about five weeks. He has had no pain whatever. I find the limb in good position but with moderate restriction of motion. I discharge him "cured." The skiagraphs taken by Henriques seems to me to indicate Perthes Disease.

October 29, 1919. Theodore is brought in to see me today. He is now a fine robust-looking young man. For several months now he has been having some pain in the hip, principally at night, and in the knee. Examination reveals very little impairment of motion, and this only in the extremes of range. I send him to Henriques for a new skiagraph. To return tomorrow for verdict.

October 30, 1919. The skiagraphs are interesting as illustrating the changes occurring in these cases as time goes on. The whole neck is shortened, and lies at about right angle to the shaft. It is thickened, but the head of the bone no longer exhibits the vacuoles seen in the earlier stages of the disease. The limb is certainly somewhat shortened, but he has only a slight limp, hardly noticeable, and there is no decided external rotation of the foot. I consider that a little care in avoiding violent exercises, and a short course of antirheumatic medicine is all that is needed. We have here a decided case of Coxa Vara.

Case 5. October 13, 1916. Mercedes D———, age 6 years. This child is sent to me with a diagnosis of "Tuberculosis of the hip." She is said to complain of the left hip. She has been complaining for about six months. She has been droopy for a couple of days, and has a good deal of fever right now. Her throat shows a patch of membrane on the left tonsil, which looks diphtheritic. I refer her back to the doctor for this. To report again to me when cured.

November 7, 1916. The child reports to me today. She has recovered from the attack of diphtheria, and is now in good health again. I examine her carefully. Flexion and extension of the hip are practically normal. Abduction, with hip flexed to right angle, is about 1/3 less on the left than on the right. Adduction is lessened about ½. Circumduction is somewhat limited, and produces slight pain. There is very little muscular spasm, and practically no fixation by the muscles. There is atrophy of the left thigh of about ½ inch. Calf ¼ inch. Apparent lengthening of ⅜ of an inch. She limps all the time, but never complains of pain, and sleeps well. I make a propable diagnosis of Perthes Disease. Skiagraph taken shows both hips. The bone changes are absolutely typical, and fully confirm the diagnosis.

Case 6. September 17, 1919. Roy L———, age 10 years. History is that in October last (1918) he had an attack of "Flu," since when he has been suffering with his right lower limb. The pain is located in the thigh and varies in severity. Examination reveals some atrophy of the right thigh, about ½ inch. The glands of the groin are slightly enlarged on both sides. The right hip is sensitive and painful on rotation, although the range of flexion and extension are little impaired. At the extreme of flexion he suffers pain. He walks with a limp, but it is moderate. Family history is negative as to tuberculosis. I send him to Henriques for an X-ray picture. Skiagraph shows marked changes in the head of the femur. To me they appear typical Osteochondritis Juvenalis Deformans. Dr. Menville reports "suspicious of T. B." In this I do not agree. I shall postpone any plaster support. Give mixed treatment Bichloride Gr. 1/48, Potass. Iodide Grs. 5, T. I. D.

June 15, 1920. The boy comes to see me today. He has been wearing spicas for some time, applied by Dr. Eldredge. Also he has been taking the mixed treatment steadily. He shows little increase in the lameness, and has not much pain. The course is typical of Osteochondritis Deformans. The attitude appears excellent. Apparent shortening of the right leg ¼ of an inch, actual shortening practically 0. Right thigh at perineum 13½ inches, left thigh 14½ inches; junction middle and lower third, right 11 inches, left 11½ inches; calf, right 9⅞ inches, left 9⅞ inches. Flexion restricted at about 135°; rotation fixed and causes slight pain; adduction and abduction both resistive. This afternoon the spica was applied. Plates were taken by Henriques this noon. Letter to be written to Dr. Eldredge.

December 13, 1920. Roy has been wearing a spica which has grown too tight, owing to his increase in weight. His activity and freedom from discomfort have been notable. On removing the spica no change in the condition noted at the last examination is evident. New skiagraphs taken by Henriques indicate that the secondary thickening of the femoral neck is beginning to manifest itself. In other respects little change in the bone appearances. It seems wise to continue to protect the hip, and an accurately fitting spica is applied.

Case 7. James G———, 5 years old. Came to the Hospital on January 23, 1922, on account of lameness. About three weeks ago the mother first noticed that the boy was limping. The lameness has been persistent, and the child says that the left hip and thigh hurt him. Examination reveals a decided limp in the left limb. All motions of the hip are practically normal, except abduction and rotation, which are both slightly limited. He has no "night cries." The throat and mouth are negative. There is no complaint whatever of the right hip. Skiagraph shows decided bone changes in both hips. The diagnosis is bilateral juvenile deforming osteochondritis. The Wassermann is reported to be negative.

DISCUSSION.

Dr. McIlhenny: Dr. Fenner has gone into every phase of the subject so thoroughly in his excellent paper that little remains to be added by those of us who might wish to discuss it. From the histories generally presented in such cases the majority of observers believe that traumatism plays an important part in the etiology. Almost invariably there is a history of a "fall" and it has been my observation, according to the statements of the family, that the disease has been initiated by a fall, but I rather think that the fall was caused by a weakened joint which antedated it. Legg thinks that interference with nutrition of the part may have something to do with it, and believed that he found evidences of the trouble in children upon whom he had operated for congenital dislocation of the hip. Allison, on the other hand, tried to produce osteochondritis in animals through traumatism, but was unable to do so, and the X-rays taken months later prove absolutely negative. Regardless of this fact, we do find cases of Legg's or Perthes' Disease developing in cases in which it had been possible to demonstrate that an epiphyseal separation existed. The most remarkable fact about this peculiar condition is that it has existed for a considerable time before it causes any discomfort to the patient, and when advice is sought and an X-ray is taken we are astounded at the marked contrast between the pathology as shown by the X-ray and the symptoms presented by the patient. The last picture Dr. Fenner showed you is of a little boy who has been coming to the clinic for several weeks. The X-ray shows little difference between the two hips, yet he presents symptoms on the left side and no trouble whatsoever on the right. Some days he presents no symptoms at all and then, within a few hours, he may begin limping again with considerable pain. The cases invariably get well, some with more deformity than others, but I believe the best treatment is rest of the part, either ambulatory with the joint immobilized, a high shoe on the well side and crutches to prevent weight bearing on the affected side, or recumbency with extension. Atrophy in these cases, I believe, is due to non-use rather than pain, and I would therefore strongly advise that massage be instituted as soon as the initial symptoms are relieved. The limp is never marked nor the shortening extreme, and cases having the trouble in the first decade never show any limitation of joint motion in adult life.

Dr. E. S. Hatch: Dr. Fenner has covered this subject very thoroughly and I simply want to add one word as to the probable causation of the disease. Dr. A. T. Legg of Boston, for whom the disease is named, told me in conversation during the past year that he feels the most probable cause to be an interference with the circulation in the epiphysis of the femoral head.

Dr. J. T. O'Ferrall: I wish to say a word with reference to the diagnosis of these cases. When a paper like this excellent one is read, doctors often become enthusiastic and make diagnoses without a thorough investigation. I would therefore suggest that care be taken in making a diagnosis. In some instances, cases of so-called Perthes' Disease have later broken down and formed true tubercular abscesses.

The lesion apparently begins in the epiphyseal nucleus, which is the real beginning of the trouble and corresponds to the first symptoms which the child often has. These symptoms, however, quiet down and there is a period of symptomless weight-bearing. Later, when the epiphyseal nucleus begins to regenerate, the head of the bone becomes too large for the socket and the corresponding symptoms, that is, limping and pain, become apparent and the child is taken to the physician. I am very sorry that Dr. Fenner did not read one of the typical histories which bring out these points very strongly.

In regard to the treatment, it is my opinion, and that of many others, that freedom from weight-bearing should be insisted upon in addition to fixation. In my own practice, I use some form of traction splint, that of Bradford's, which transmits the weight to the pelvis and not to the diseased head.

COUGH AND THE LARYNGOLOGIST.*

By ARTHUR I. WEIL, M. D.

The chief purpose of this paper is to call attention to a form of local treatment, which in a certain class of coughs gives more relief than any internal medication or other means of treatment with which I am acquainted. The method is by no means new; indeed, it has been in successful use for many years by a small number of laryngologists. It is my impression, however, that the treatment has been so little practiced by our local men, and it has been so uniformly beneficial in my hands when used in the proper class of cases that I think it worth while to bring it to more general attention. I refer to the use of tracheal oil injections in treating coughs dependent on laryngeal, tracheal and bronchial irritation and inflammation, or even certain general diseases of the lung. The technique is simple, as will be explained at the proper time, especially so for the laryngologist, accustomed as he is to local treatment of the throat, and it would seem to be the part of wisdom to let him try his hand before the patient has become discouraged by long-continued cough which irritates and disturbs him throughout the day; or, worse still, exhausts him through lack of sleep at night.

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*Read before the Orleans Parish Medical Society February 13th, 1922.

Since the above treatment, however, is limited in its applicability strictly to tracheal and bronchial coughs, and not to throat coughs in general, it might be well first to take a brief glance at the other forms of cough of interest to the laryngologist and amenable to his treatment, with a few words as to their symptoms and relief. In this way may be avoided the indiscriminate use of tracheal oil injections in all forms of throat cough. It would thus be limited to its proper sphere and other forms of throat coughs would receive their appropriate treatment.

Coughs in which the laryngologist are interested may be divided into four classes: 1. Reflex cough. 2. Coughs due to pathological conditions in the naso-pharynx and throat. 3. The true tracheal and bronchial cough due to inflammation and irritation in these regions, and, 4. Coughs due to pulmonary disease. It is only in the third and a few of the fourth class of cases that the above treatment may be expected to be effective.

1. Reflex Cough.—It is a well-known fact that coughs may be the result of a reflex irritation either in the nose or in regions remote from the air passages. A spur of the septum, a polyp in the nose, a localized area of hypersensibility in the nasal mucous membrane, a dripping from the nose into the throat, either from chronic sinus disease or chronic rhinitis, may any of them cause a persistent and annoying cough. A careful examination of the nose is therefore indicated in the search for the cause of the cough. Frequently unexplained coughs may be found to originate in the nose and appropriate treatment directed to the cure of the pathological condition will quickly cure the cough. As examples of reflex cough from regions remote from the air passages may be mentioned the well-known cough due to irritation in the external ear canal, those due to worms in the intestine, etc. These, however, especially the latter, are of little interest to the

laryngologist and need detain us no further. The same may be said of reflex cough due to enlarged bronchial lymph glands, peribronchial infiltrations and the like.

2. Naso-pharyngeal and pharyngeal coughs. A very large number of coughs, some acute, but mostly chronic, some of them lasting for years and causing extreme annoyance to the patient, have their origin in the naso-pharynx and pharynx. Chronic naso-pharyngitis is frequently accompanied by a feeling of irritation and tickling in this region, causing cough. It often happens when applying silver or other drugs with an applicator to the naso-pharynx that the patient exclaims: "That's the spot, doctor; you just touched the spot where it tickles."

The pharynx itself is possibly the most prolific source of irritative cough. To mention a few of the conditions which are apt to give rise to the cough impulse, there are, elongated uvula, granular pharyngitis, a ragged, hypertrophied or chronically inflamed tonsil, pharyngomycosis and enlarged tongue tonsil. There are many others, but these are the most important. They are usually readily diagnosed and respond to appropriate treatment. We have all known persistent and annoying coughs to be cured by snipping off a uvula that was too long, cauterizing the hypertrophied areas in granular pharyngitis, removal of an offending tonsil, picking off the sharp and needle-like spicules of pharyngomycosis which stick into the throat like needles, or by the cauterizing or removal of an enlarged tongue tonsil. A lingual varix may also sometimes give rise to cough, but this is not always so amenable to treatment.

This brings us, then, to the third and fourth classes, that is, diseases of the trachea, bronchi and lungs, which are the only ones where we may expect benefit from the use of tracheal oil injections. As Thompson observes, the pathological condition in the trachea, bronchi and lungs in inflammatory diseases are the same as we are accustomed to see and treat in the nose and larynx. We can see the effect of our remedies in these regions and build up a rational therapy from our observations. Why not apply our knowledge to the same condition in the lower respiratory tract? The fear that harm may be done by tracheal injections of remedies intelligently chosen has been proven groundless by the experience of those who have tried it. It is true that injection of watery solutions directly into the trachea gives rise to laryngospasm, extreme tracheal irritation and strangling cough. Fortunately, however, the same is not true of oily solutions, which may be injected freely and are easily tolerated. Equally fortunate is the fact that most of the remedies we wish to use are soluble in oil.

There are three methods of applying treatment locally to the mucosa of the trachea and bronchi: sprays, nebulizers and direct injections. By the first two methods not sufficient of the remedy is carried to the diseased surfaces. But I do use an oily inhalation breathed deeply into the lungs by the patient at home, in addition to the office treatment with injections. Used thus as a supplement to the injections and containing approximately the same ingredients, the oily inhalation undoubtedly gives relief as well as helps expedite the cure.

Again quoting Thompson: In acute inflammation the first indication is to reduce the swelling of the mucosa. Epinephrin will do this, and in Adrenalin inhalant and other similar solutions we have our remedy at hand, soluble in oil without losing its therapeutic properties. The watery solutions of Epinephrin cannot be used for this purpose. The next indication is to lessen the secretion in the second stage. Atropine has a direct inhibitive action on the muscles and mucous glands of the bronchi through the peripheral nerves and therefore dilates and dries the bronchi. The alkaloid is soluble in oil and therefore available for our mixture used for tracheal injections. The next indication is for a local analgesic to lessen the irritability of the mucosa and stop the harassing cough that robs the patient of his rest. Three remedies meet this indication.

Camphor, menthol and chloretone are all soluble in oil, are all mild but distinctly effective analgesics, especially on the mucosa of the air passages, and in addition, have more or less antiseptic properties. An oily solution of these substances, therefore, with usually the addition of some oil of eucalyptus, is what I ordinarily use for my tracheal oil injections. When the condition is acute and it is wished to deplete and shrink the swollen mucous membrane, adrenalin inhalant in the proper amount is added, or where we wish the drying effect of atropine that alkaloid may be added to the solution. I must confess, however, that atropine has not proven as efficient in my hands as with some of those who have used it, though it may be worth trying where indicated. The stock prescription which I ordinarily use for these tracheal injections is as follows:

Camphor	grains	8
Menthol	grains	20
Oil of Eucalyptus	minims	8
Chloretone	grains	10
Adrenalin Inhalant	drachms	2
Liquid Alboline q. s. ad.	ounces	2

Of course, the proportions may be varied to suit the individual case. It is to be noted that most of the ingredients used in the oil are volatile and though the oil itself possibly does not go deeper than the bifurcation of the trachea and the entrance to the right and left main bronchi yet the vapor is drawn deeper into the lungs by the cough and deep inhalation which usually accompanies the injection. The breath of the patient is found to be laden with the vapor for a considerable time after the injection.

The technique of injection is simple. An ordinary laryngeal syringe containing one or two drachms of the solution is introduced under the guidance of the laryngeal mirror, so that the tip of the canula is behind the epiglottis and just over the opening of the glottis. With a little practice this can be accomplished without touching any part of the throat and therefore without causing any gag reflex. With the syringe in place, the patient is instructed to breathe slowly and rather deeply, and as the cords open wide the solution is injected between them deeply into the trachea. In patients with very gaggy throats it is sometimes impossible to use the laryngeal mirror but the injection may be satisfactorily carried out by grasping the tongue with a napkin yourself, drawing it forward and downward with one hand while with the other the tip of the canula is carried, without touching the throat, into a position over the glottis and allowing the patient to inhale during the injection. Some of the solution may be lost and swallowed by this method but a portion of it enters the trachea, and if necessary the process may be repeated once or twice in order to get sufficient into the trachea.

A more or less pronounced spasmodic cough, though not sufficient to seriously disturb the patient tells us that the solution has reached the spot and then the patient has that peculiar cooling burning feeling caused by the menthol vapor entering deeper into the lungs with each deep inspiration.

This procedure I have found to be distinctly helpful in most cases of acute and chronic laryngitis, trachitis and bronchitis. It gives the patient immediate and more or less prolonged relief from the frequent and irritative cough, and gradually heals the inflamed mucous membrane. The treatment must be repeated daily at first and sometimes in very acute cases twice daily, then every other day and at longer intervals as the condition improves. By its use may be avoided the giving of the various sedative and expectorant cough syrups which tend to upset the digestion, which act only indirectly upon the respiratory passages and whose benefit in many cases is questionable. The relief in most instances is remarkable and in all cases of tracheal and bronchial irritation I have found its use to be highly satisfactory.

In one class of cases this treatment may be said to be almost a specific, namely in those cases of acute tracheo-bronchial irritation accompanying influenza infection. We all know the condition, with the constant, persisting and distressing cough which adds to the patient's misery by increasing the pain in the chest and the headache with each cough paroxism. With these patients the use of the oil injection is wonderfully soothing and healing. During the great ''flu'' epidemic of three years ago I happened to be stationed at an army base hospital with over four thousand influenza cases. I could not hope to reach them all, but among the number were over a hundred nurses the majority of whom presented as the most distressing symptom this constant racking and sleep destroying cough. Though the sensation of a tracheal oil injection is not altogether an agreeable one, still they used to cry out for it and begged me to come to them again the last thing at night so as to give them a restful night's sleep. I also believe the proportion of pneumonia was less in patients so treated. In civil practice, likewise, I have found this by far the most satisfactory treatment for that form of the disease.

In true pulmonary disease we cannot hope for a cure from this treatment alone, but there are certain conditions which may be greatly relieved, while by diminishing the cough and by bringing the mucous membrane into a healthier condition the cure may be hastened.

Bronchial asthma as we know is practically always accompanied by chronic bronchitis and often dependent upon it. The oil injections may have such a favorable influence upon the bronchitis that the asthma is distinctly alleviated.

While we cannot hope to cure bronchiectasis by this method of treatment, we nevertheless know the thick walled cavities are walled off from the general circulation and are consequently almost impervious to any internal medication. Where the cavities are favorably situated they may be somewhat disinfected by the vapor from the oil injections and the amount of the pussy discharge and the foul odor may be materially diminished. It is only fair to add that as far as my personal experience is concerned this statement is entirely hearsay. I have had no occasion to try this treatment in bronchiectasis and this observation is a quotation from the experience of others.

In pulmonary tuberculosis of course, this treatment is merely palliative but it is surprising sometimes how much may be accomplished in the way of allaying the tickling cough, giving more comfort to the patient and allowing him rest and sleep. These are necessary elements in the cure of the disease and may be the deciding factor in determining the outcome of the case. In addition it is a well known fact that the tubercle bacillus does not attack healthy mucous membrane and a systematic treatment by oil injections may keep the mucosa healthy and be of great assistance in maintaining the integrity of the larynx and reventing laryngeal tuberculosis.

In conclusion I merely wish to say that the above treatment has been of such wide application and of such material assistance in my hands in the treatment of coughs of laryngeal, tracheal and bronchial origin, that I considered it well worth while to call it to the attention of the society.

DISCUSSION.

Dr. W. T. Patton: Dr. Weil has covered this subject so thoroughly there is very little more to be said. However, I wish to emphasize several points.

I believe the cough from lingual tonsils more common than is usually thought, also the reflex cough from diseased tonsils and adenoids is rather common in children.

There is one condition in which I am particularly interested, that is, coughs which persist after being gassed or after influenza attacks; both appear to be the same condition. The thickened mucous membrane of the trachea and larger bronchials. Internal medication has very little effect on these. Tracheal injections of oils similar to Dr. Weil's description seem to do these cases a great deal of good; also the use of the atomizer at home with the downward tip.

Recently an article was published stating that the use of oil of chaulmoogra in tubercular laryngitis often relieves pain after second intra-laryngeal injection; also it often clears up ulcers.

Certainly there are a number of coughs that can be treated much more satisfactorily by throat application than by internal medication.

Dr. J. P. O'Kelly: I am a victim of laryngeal and tracheal cough and can speak from experience. I had "grip" eight or ten years ago, and during the winter months, especially after having caught a cold, the cough persists until the warmer weather of spring comes. So far I have not been able to find a remedy which gives entire relief. I treat my throat when it gives much trouble, and let up as it gets better, as is usually the case with doctors. Dr. Weil has covered the subject thoroughly. If I understood him correctly, he referred only to the tracheal injections, but said nothing about the deep tracheal spraying with some astringent, which is of so much benefit in these cases. I use a deep inhalation spray of an astringent watery solution, which most patients can take very easily. This is not for home treatment, but must be given in the office where compressed air is available, as the use of the hand atomizer in such cases is of no benefit whatever. This astringent spray is followed by spraying with an oily solution, such as the doctor has mentioned, after which the patient feels much more comfortable. In these cases the mucous membrane of the larynx and wind-pipe is thickened and congested, from a slight amount to a deep redness. The astringent spray tones up the thickened membrane, lessens the congestion, and the cough decreases. It is useless to use expectorants, which have no effect whatever on this kind of a cough. They simply fill up the stomach, frequently causing the patient to become nauseated. Codeine is useful, and I resort to it when necessary. I might add that there has been this year a great deal of laryngeal and tracheal cough. Every patient with a susceptible throat, after a slight cold, will develop this condition, so bad at times that sleep is interfered with.

THE NON-SPECIFITY OF VACCINES.

By VICTOR E. KEA, M. D, Atlanta, Ga.

Clinical experience in the treatment of disease with the many remedies at our command leads us into such a variety of unusual observations that we are often brought to a point where the generally recognized ideas must be revised. When immunologic problems were first brought to the forefront as a result of animal experimentation, it was quite conclusively demonstrated that immunizing responses resulting from infections or vaccine inoculations were absolutely specific; that is, the antibodies which are formed as a result of the infection or vaccine injection were only destructive to the particular germ contained in the infected area or injected vaccine, is at once led to the conclusion that only specific antibodies were formed in immunologic processes. When, however, we began to apply this principle of immunization in the prevention and treatment of disease in a man it was soon discovered that aside from specific immunizing responses, protection and cures from infectious diseases took place which bore no relation to the organisms contained in the vaccine.

Wright in discussing this subject (*The Lancet,* March 29, 1919) points out that twenty years prior to this time the Indian Plague Commission contended that anti-plague inoculations had cured eczema, gonorrhea, and other infections. He also points out from statistical observations that while pneumococcus inoculations, as applied to employees of South American miners, reduced the mortality rate of pneumonia by 85 per cent. The mortality rate from other diseases was also reduced by 50 per cent.

In an editorial the editor of the *Journal of Laboratory and Clinical Medicine,* September, 1920, points out that this non-specific immunizing reaction is quite general; that recovery from one infectious disease from the immunity which develops also offers an appreciable amount of protection against other infections.

My attention was called, during the war, to the fact that some soldiers having gonorrhea were cured of this disease after their immunizing treatment for typhoid fever, so I was constrained to try typhoid vaccine in a case of gonorrhea that was not yielding to other methods of treatment. The results obtained were so encouraging that other cases were similarly treated with good results. During the past two and one-half years, I have treated at least fifty cases of gonorrhea, using typhoid vaccine and have concluded from the results obtained that specificity is not as essential a requirement in vaccine therapy as was at one time thought.

A few cases will serve to illustrate the results I have obtained.

Case No. 1. October 5, 1918. John M., colored, aged 22, came to my office desiring to be immunized against typhoid fever. He did not mention the fact that he had a case of gonnorrheal infection of three months' duration and the discharge was continuing. He received his first dose of typhoid fever vaccine October 5, second dose October 12, and the third on the 17th. After the third injection the patient called my attention to his case of gonorrhea. He noticed that the discharge had practically ceased. I found a watery discharge which, on microscopic examination, showed coli and staphylococci present but no gonococci. Patient was placed on a mild irrigation of potassium permanganate and all discharge ceased in seven or ten days. Microscopic examination was again made from the secretions of the prostate and no gonococci were found. There has been no return of the trouble after three years' time.

Case No. 2. October 11, 1918, Mr. H. C., white, aged 28, applied for treatment for gonorrhea. I prescribed internally hexamethylenamine and a local irrigation with mild potassium permanganate (1-1500) daily. This treatment was continued two weeks without any apparent improvement. On October 25, I gave him fine minims of typhoid vaccine as an initial dose. On the 29th, eight minims were given, from which the patient had a violent reaction and a lessened discharge. The patient returned to my office on November 8, on which date I gave him a third inoculation of fifteen minims, which also gave a violent reaction, accompanied with chills and fever and confined him to bed for three days. On November 11, he came to the office and received a fourth inoculation of eight minims, from which no reaction was obtained. The discharge ceased after the third injection. Local treatment was continued for a week or ten days longer, at which time the urethritis had cleared up and microscopic examination showed absence of gonococci.

I have met the patient frequently since then and there has been no return of the trouble.

Case No. 3. June 5, 1920, Mr. J. D., white, Fostoria, O., aged 25, applied for treatment for a chronic case of gonorrhea. I prescribed internally, oil of sandalwood, potassium acetate and syrup of juvans, as an antiseptic and a diuretic. On September 8 irrigation with potassium permanganate (1-1500) was instituted and was continued until the 17th. On this date I procured a vaccine for gonorrhea made by Swan-Myers & Co., and began its administration. The initial injection was five minims and this was increased two minims each day until the twenty-fifth of the month. The patient apparently had no reaction from this vaccine and it did not seem to modify the course of the disease in any way. It looked at this time as though the patient would develop balanitis. On this date, the seventeenth, I gave him four minims of typhoid combined vaccine; balanitis had developed. I instructed him to bathe his penis in warm normal salt solution three or four times daily. On the 29th the patient returned and explained that he had had a severe reaction but felt much better. The discharge was much freer and serous in character. I next saw the patient on July 1, at which time he was given a second injection of typhoid combined vaccine of eight minims. He was told to return each day for irrigation. The balanitis was subsiding. The discharge gradually ceased and on July 3 a microscopic examination was made and a few intercellular gonococci were found. The patient felt well and asked when he could be discharged. Local treatment was continued until July 5, when fifteen minims of the same vaccine were given. By the eleventh of the month the discharge had practically ceased. Microscopic examination was made on this date and no germs were found. The patient took French leave and it was three months before I heard from him. There had been no return of this disease.

Case No. 4. J. A. P., aged 23, applied May 10, 1921, for treatment of an acute gonorrhea. I began treatment with sandalwood oil, potassium acetate and syrup of juvans and kept him on this treatment four days to relieve the very acutely inflamed penis. He returned on the fourteenth feeling some better, but his urine was found to be heavily laden with pus shreds in the third glass. At this time I put him on a mild irrigation of potassium permanganate and ten grains of benzoic acid, as the urine was cloudy with phosphates. This was on May 14. On May 15 he returned for local treatment and the third glass still showed shreds and gonococci present. The local treatment was kept up until the nineteenth, at which time he was given ten minims of typhoid fever vaccine. Local treatment was kept up until the 21st, when urine was clearing each day. On the 23rd the third glass was practically clear of shreds and there was no discharge. The patient feeling well, treatment was kept up until the 24th, on which date 1 c. c. of typhoid vaccine was given. The patient was a traveling salesman and wished to leave town, but due to a violent reaction, he was unable to do so until the 29th. I visited patient at his home until the 29th and examined the urine each day; it was clear in all three glasses. The patient left on the 30th and was advised to see another doctor for further irrigations.

The patient returned to me on July 24, saying he had seen another doctor and that he had given him four mild irrigations and dismissed him. The first two doses of vaccine made him feel achy, but the third dose caused a violent reaction and I think that this is the dose that did the work.

It therefore seems that there is little doubt but that the specific action of vaccines is open to serious question and warrants very careful consideration.

THE REPUTED VESICATING PROPERTIES OF THE GRANARY WEEVIL, *CALENDRA GRANARIA*.

By **WILLIAM A. RILEY**, University of Minnesota.

There is prevalent among entomologists and medical men interested in the subject the idea that the granary weevil, *Calendra granaria,* possesses vesicating properties comparable to those of the true Cantharid beetles. It has also been suggested that they are responsible for some of the instances of poison flour.

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Thus, Herrick, 1914, in the standard text on household insects says regarding this insect, ''A curious, interesting and perhaps important bit of knowledge concerning this insect is the fact that it has been successfully used as a substitute for the Spanish blister beetle, (*Cantharides*).'' He also calls attention to the fact that since these weevils seem to possess the same qualities as Spanish flies flour containing the pulverized bodies of these insects might prove seriously injurious to persons eating it.

Apparently the current conception is to be traced pretty largely to an article by Walsh and C. V. Riley which appeared in the *American Entomologist* in 1869. They state that ''We have recently been informed by Dr. W. D. Hartmann of West Chester, Penn., that 'in the south this beetle has been used successfully as a substitute for the Spanish blister-beetle (*Cantharides*), and with this advantage over the foreign insect, that it does not cause strangury, to escape from which,' as Dr. Hartmann further observes, 'is a very great and important item in the action of a blister.' We are not informed how the above discovery came to be made in the Southern States; but infer that it was probably from the great scarcity there of the imported Spanish fly, during the late war, in consequence of the rigid stringency of the blockade of their sea-ports. Dr. Hartmann goes on to suggest, that it would be a very good idea to ascertain experimentally, whether the Colorado Potato-bug may not possess the same medicinal powers as the Grain Weevil, and the true Blister-beetles (Lytta) both native and exotic; and that, in that event, we might turn the hateful pest to some practical account.

''There can be no doubt that great numbers of this Grain Weevil are often ground up into flour; and that, although the coarser and harder parts of them, such as the legs, snouts and wing cases, would probably be for the most part retained by the bolting-cloth, yet that a considerable portion of the body will be ground up fine enough to be incorporated with the Extra Superfine Family Flour, of which most of us partake every day. In that event, if the number of weevils should be large, the flour would undoubtedly be poisonous; for we know now that these weevils have nearly the same medicinal properties as Spanish flies, and Spanish flies, as is notorious, are, even in comparatively very small doses, a most violent and dangerous drug to take internally, and when swallowed in larger doses are a deadly poison.''

In view of the importance of the matter I have made a special effort to trace more fully the origin and basis of the view. I have inquired of a number of men who were prominent in the medical work in the South during the Civil War and have made inquiries from pharmacists in that section who might have information regarding it. In no instance have I succeeded in getting any confirmation of the statement.

A very important reference I owe to Dr. J. T. Lloyd of Cincinnati. In answer to an inquiry, he writes regarding the granary weevil, ''If it ever had any important place during the Civil War, it surely would have been mentioned in 'Resources of the Southern Fields and Forests', 1863. This book was written by Francis P. Porcher, who was Surgeon General of the Confederate armies. It is a work of more than six hundred pages which names a great number of medicinal plants, and some animals, that could be substituted for drugs not on the market of the Confederate States. Under the heading 'Substitutes for Cantharides' there are ten different references,—all plants, except the 'potato blister beetle.' As General Porcher was in such an excellent position to know of all drugs on the Southern market during the war, and wrote at such length on that subject, without making mention of the weevil, I think we can feel fairly sure that it was not extensively used.''

In view of the fact that there seemed to be no clear cut experimental work on the subject I suggested to one of my graduate students, Miss Florence Defiel, that she undertake experiments, checking over the work thoroughly by the use of commercial cantharides.

This she has done in great detail. Her results will be published elsewhere in full, but I may say that she has failed wholly in her efforts to demonstrate the vesicating effect of Calendra. Without exception the control preparation of *Mylabris*, the Chinese blister beetle which she used, caused vesication and since she used all of the standard solvents of cantharidin, it seems clearly established that *Calendra granaria* does not possess this substance.

In addition to these attempts to produce blisters, isotonic solutions of the dried Calendra in salt solution were injected into rats and mice. Check experiments were performed with a clear salt solution of the same concentration and with solution of Mylabris prepared exactly as were those of Calendra. The animals injected with the Calendra and the salt solution were unharmed. All of the check rats injected with Mylabris solution died within 2 hours after injection.

Feeding experiments were likewise tried upon mice, rats, frogs, chickens, and rabbits. The results were all negative.

In order to obtain further information regarding the possible effects of the granary weevil, I ingested a grain (.06 gram) of the powdered Calendra beetle, the dosage usually given internally for Cantharides and one quite sufficient to cause definite results with that drug. Though the powder was taken on an empty stomach there were none of the painful or disagreeable symptoms that would have followed the ingestion of the true cantharid beetles. The bowel movements during the next twenty-four hours were normal. There were no evidences of diuretic action, and daily examination of the urine for five days failed to show any traces of albumin. The temperature remained normal and though the pulse was quickened, the cause was probably psychological. Differential blood counts were not made but would have been vitiated in any event by an existing sinusitis.

In view of the fact that the related rice beetle *Calendra oryzae* is very common in the Southern United States the detailed experiments on vesication were also extended to this species because of the possibility of a confusion of this species with *C. granaria*. The results were altogether negative.

It seems apparent that Dr. W. D. Hartmann's report to Walsh and Riley was based upon a misconception. There are a number of species of true Meloid beetles occurring in our southern states which like their near relative, the Spanish fly, possess cantharidin. This property of various native beetles was well-known to physicians and indeed one species, *Epicauta vittata* was at one time official, having been included in the U. S. Dispensatory. We have seen in the above quotation from Dr.

Porcher, that the "potato blister beetle" was well known. If the southern physicians during the Civil War were inconvenienced by inability to obtain the imported Spanish fly they would naturally turn to some of the related forms.

The evidence then is clear that the granary weevil does not possess cantharidin and there seems no basis for the theory that the presence of the insect remains in flour is responsible for cases of poisoned flour.

REFERENCES

Herrick, G. W., 1914. Insects injurious to the household and annoying to man. New York. xvii, 470 pp.

Walsh, B. D., and Riley, C. V., 1869. Poisonous flour. **Amer. Entomologist,** i: p. 179.

ANNUAL REPORT OF THE RETIRING PRESIDENT.*

By S. M. BLACKSHEAR, M. D.

I beg to submit the following as my report of the operations of this Society for the year 1921.

It has been my honor and extreme pleasure to preside over this organization for the past year and with the hearty co-operation, earnest assistance and harmonious effort of the board of directors, the various committees, (both standing and temporary) and the employees of the society I am happy to say that we have just completed a very satisfactory year's work and that the society is now swimming with the tide.

Soon after being installed in office the board of directors after investigation felt that the insurance against fire for the library and office equipment was insufficient since the library had been so materially augmented and improved within the past year. Accordingly after an appraisal the amount was immediately increased. Liability insurance for the employees was also taken out which was most fortunate on account of the serious accident which happened to our Assistant Librarian who was injured by the collapse of eight tiers of books. I am glad to say that she was not incapacitated for very long and the insurance company looked after their obligation.

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*Read before the Installation Meeting, Orleans Parish Medical Society, January 9, 1922.

Unfortunately the State Board of Medical Examiners found it advisable to transfer their offices to the new Hibernia Bank Building, but explained that the move was one of advantage to the board in order that they might more conveniently carry on their investigation work as regards quacks, etc.

This organization was ably represented by Dr. Jno. B. Elliott on the special board appointed by the Governor to investigate the narcotic clinic, which investigation resulted in the discontinuance of the clinic.

The license tax was thoroughly investigated with a view toward its elimination. However, we found that it was embodied in the State Constitution and that it would be just about as easy to have it eliminated as it would be to have the Volstead Act repealed, so we decided to ''pass the buck'' to the Louisiana State Medical Society.

We want to take this opportunity to thank Tulane University for continuing to house our Society in this building and to assure them of our deep appreciation and gratitude.

We feel that we should congratulate the society on its wisdom in re-electing the secretary, treasurer and librarian, all of whom have rendered such faithful services in the past that we naturaly feel assured of their inestimable worth in the future.

I want to thank the chairman and members of all the committees, both standing and temporary, for their co-operation and wish to especially commend the work of the Scientific Essays Committee on the excellent scientific programs prepared throughout the year and the Judiciary Committee for the diplomatic and effective manner in which its problems were handled.

I should be remiss were I to close this report without commending the services of the Assistant Librarian, Miss M. L. Marshall, and Assistant Secretaries, Misses Dollie and Bessie Dillon, who have always had the welfare of the society at heart and rendered efficient help in its combat.

ADDRESS OF INCOMING PRESIDENT.*

By WM. H. BLOCK, M. D.

I would be ungrateful, indeed, if I were not conscious of the honor which has been conferred in electing me your President. I sincerely trust that I will be able to live up to your expectations and that when my term is finished that you will not regret having trusted to me the honor of piloting the affairs of the society during the term 1922.

Being on the same platform with such distinguished speakers as have preceded me, I feel a hesitancy in even attempting a talk of any sort, but there are just a few things that I want to say more in the nature of a plea to you for your co-operation. I realize that being your President—yet I am your servant—I am yours to command and I asure you I will at all times be ready to listen to suggestions and to take up with you matters pertaining to the affairs of the society, the welfare of the public health, the interest of the medical profession, or other subjects which you might care to discuss with the President of your society, with a view to solving problems for the benefit and to the best interest of all concerned. I therefore ask the whole-soul co-operation of each and every member of the society to assist me. I cannot do things alone. No corporation is run by one man. I must have your help.

I am not going to tell you what I am going to do during my term but I can give you my ideas of what I think should be done and what I will aim to do. There are one or two things that are especially interesting to me. *First*, our Library. I propose to spend on our Library every cent of our reserve that I can get our board to appropriate. I believe it to be our biggest asset and our money cannot be better spent than in adding to it.

By adding to it I mean not only purchasing new books and subscribing to magazines, but having them well indexed and well kept so that the medical profession will, at all times, have at its disposal, the latest literature on the subject in which it may happen to be interested. I have great respect for and full confidence in the chairman of our Library Committee and the committee itself, and I trust that they will feel as I do about it and make every effort to add to our already magnificent collection.

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*Read before the Installation Meeting, Orleans Parish Medical Society, January 9, 1922.

Of equal importance do I look upon our scientific sessions. I feel that here is where we can be of great service to ourselves and to the public in general. Free and open and plentiful discussion, scientifically, of medical subjects, will most certainly be of immense benefit to, not only the profession itself, in making us more proficient in our calling, but will result in benefit to our patients. We have men in our midst who are the equal in scientific attainments to any in the country and we want these men to come and talk to us and tell us what they are doing. Let us induce these shining lights to give us the benefit of their work. Let us develop here an Osler or a Mayo. I believe we have them among us and it is right here in this County Society that their attainments and ability to benefit humanity should be brought out and put to practical value.

Our absent members. There is good material outside of this society, which should be brought into it. There are a great many men who are eligible to membership in this society, who for some reason or other have stayed out. I believe we ought to make a special effort to induce them to come with us, to enroll themselves with organized medicine because they need us as well as we need them. Much more can be accomplished in the way of public health measures and medical legislation with a large representation of the medical profession.

I will not concern myself much about the finances of the society for the reason that I feel we have as our treasurer one who has given us evidence in the past of his watchfulness over the welfare of our treasury. We know that we now have ample income from our members' dues and bond investments to more than cover our actual expenses. What to do with the surplus is a matter for the board to decide and I am sure they will decide wisely.

I want to say that I have given considerable thought to the selection of my committees and I earnestly request each man, selected for duty on a committee, to consider that he was put there because of his especial fitness for that particular service, and to give us his full co-operation.

Before concluding I desire to extend to the outgoing administration my congratulations upon their accomplishments during the past year. I would be fortunate, indeed, if at the close of my term, I can report a record as good, and yet—"there is nothing so good, that it cannot be better." So let us hope and earnestly strive to do even better, for it behooves no man to stand still, and to fall back would be inexcusable.

In conclusion permit me again to thank you for the honor which you have conferred upon me and to say to you that I will endeavor to give you the best there is in me with a view to improvement and progress along lines that will be of benefit to each and every one of us and to the sick in our care.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By **DR. P. T. TALBOT**, Secretary-Treasurer.

The House of Delegates of the Louisiana State Medical Society will be called to order on Monday morning, April 10, 1922, at 10 o'clock, in the Chamber of Commerce, Alexandria, La.

The president, Dr. J. E. Knighton, has asked to have it announced that all meetings of the House of Delegates, also all scientific sessions of the Convention, will be called to order *on time*, as specified in the program. Your kind co-operation in this regard is earnestly requested and the delegates and essayists should take special cognizance of this fact so as to be on time and not delay the meetings.

As you will observe, we have a very large program and it will be only by strict adherence to time limits of papers and discussions, and by opening sessions punctually, that we will be able to complete same.

Meeting of the Secretaries of each Parish Medical Society in Louisiana will be held April 10, in the afternoon; hour and place of meeting will be given at the Registration Office. This meeting is called strictly for the purpose of "organization."

A meeting of the Railway Surgeons of Louisiana will be called at some convenient time during the Convention. Inquire at the Registration Office for particulars—time, date, place, etc.

PLAN OF ARRANGEMENT.

Monday, April 10—10 a. m., Meeting House of Delegates, Chamber of Commerce; 12 m., Lunch, Baptist Hospital; 2 p. m., Meeting House of Delegates, Chamber of Commerce.

Tuesday, April 11—10 a. m., Call to Order by the President, Dr. J. E. Knighton; Meeting Society, Auditorium City Hall; Invocation, Rev. O. W. Bradley; Welcome on behalf of City, Hon. John Foisy, Mayor; Welcome on behalf of Rapides Parish Medical Society, Dr. Fayette C. Ewing, President; 12 m., Lunch, U. S. Public Health Hospital No. 27, Camp Stafford; 2 p. m., Session Society, City Hall Auditorium; 8 p. m., Scientific Session, Open Meeting, followed by Informal Reception, Hotel Bentley, Italian Hall, for Members, Lady Guests and other Medical Guests. 8 P. M., Section on Sanitation, City Hall Auditorium.

Wednesday, April 12—10 a. m., Session Society, City Hall Auditorium; 12 m., Lunch, Hot Wells; 2 p. m., Session Society, Hot Wells; 5 p. m., automobile ride back to city by Country Club; 8 p. m. Rapides Theatre, address by President and Annual Oration by Hon. John R. Hunter.

Thursday, April 13—10 a. m., Session Society, City Hall Auditorium; 12 m., Lunch, Louisiana Hospital for the Insane, Pineville; 2 p. m., Session Society, City Hall Auditorium; 8 p. m., Banquet, Hotel Bentley, Italian Hall (Members).

Entertainment for Visiting Ladies and Resident Ladies, Mrs. J. A. White, Chairman.

Tuesday, April 11—Evening, following the Scientific Session, Informal Reception with members of Society at Italian Hall, Hotel Bentley.

Wednesday, April 12—3 p. m., an afternoon at the Country Club.

Thursday, April 13—12 m., Lunch with Society members at the Louisiana Hospital for the Insane, Pineville; 3 p. m., Automobile Ride.

HOTELS

Reservations can be made in advance by writing any of the following hotels, or to Dr. Clarence Pierson, Chairman: Hotel Bentley, Rapides Hotel, European Hotel.

HEADQUARTERS.

Hotel Bentley will be Headquarters for the meeting. Opposite City Hall.

REGISTRATION.

A place for registration will be reserved on the main lobby floor of Hotel Bentley. Official badges to be procured here at time of registration.

MAIL.

Any mail or telegrams sent in care of the Convention will be delivered at the Registration Desk in the Hotel Bentley lobby.

INFORMATION.

Any information desired concerning the Convention, the city, etc., can be had at the Registration Desk.

CLUBS.

The following clubs have declared open house to the members of the Society wearing the official badge. Cards not required: Rapides Club, Country Club, Elks' Club, Community Club.

MEETING PLACES.

Meeting places: City Hall, Hotel Bentley, Chamber of Commerce Auditorium, situated within one block of each other in the heart of the city, so that everything will be centralized.

COMMITTEES.

Dr. Clarence Pierson	Chairman Arrangement Committee Alexandria, La.
Dr. Marvin Cappel	Chairman Finance Committee Alexandria, La.
Dr. Paul King Rand	Chairman Program Committee Alexandria, La.
Dr. J. A. White	Chairman Commercial Exhibits Alexandria, La.
Dr. E. M. Levy	Chairman Local Scientific Exhibits Alexandria, La.
Dr. J. I. Peters	Chairman Transportation Committee Alexandria, La.
Dr. S. C. Holloman	Chairman Publicity Committee Alexandria, La.
Dr. I. F. Littell	Chairman Ladies' Entertainment Alexandria, La.
Dr. L. J. Menville	Chairman State Scientific Exhibits New Orleans, La.

The Scientific Essays Committee respectfully requests every Doctor who has any Scientific Exhibits to offer at the annual meeting to get in touch, at once, with Dr. Leon J. Menville, Hibernia Bank Building, New Orleans, so that suitable accommodations can be retained for their exhibits.

NEWS AND COMMENT.

The St. Louis Meeting of the American Medical Association.—The arrangements of the St. Louis profession for the meeting places for the Session of the A. M. A., to be held in their city May 22-26 next, are both fortunate and convenient. The grouping of the meeting places is so compact that to walk from the Registration Building (Moolah Temple) to the farthest hall would not require more than fifteen minutes. Between sections is a matter of five minutes. The Registration Office, Post Office and Commercial Exhibit are to be in Moolah Temple. The main hall of the Odeon will be used for the opening session, and for the Sections on Practice of Medicine and Diseases of Children. In the Assembly Hall of the same building the Sections on Pharmacology and Therapeutics and on Pathology and Physiology will meet. The Sheldon Memorial will be the meeting place of the Sections of Ophthalmology, and Laryngology, Otology and Rhinology. The Section on Surgery and on Obstetrics, Gynecology and Abdominal Surgery will be held in the Third Baptist Church. The Sections on Orthopedics and Nervous and Mental Diseases will meet in the Law School of St. Louis University. Dermatology and Syphilis and Urology will use the large Union Methodist Church. The Sections on Gastro-Enterology, Proctology and Preventive Medicine will meet in the large hall of the Musicians' Club. The Section on Stomatology is assigned to the assembly hall of St. Peter's Parish House. Immediately in the neighborhood of the meeting places will be found three of the most important clubs, the St. Louis, University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district and precautions have been taken to insure that normal rates will be charged. The St. Louis profession is preparing for an unusual attendance; hotel reservations are coming in rapidly, but it is purposed that even the late comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as possible. Dr. M. B. Clopton, 3525 Pine St., St. Louis, is Chairman of the committee on Sections and Section Work.

Arkansas Medical Society. The next meeting will be held in Little Rock, May 17-19 next. It is intended to make this a "home-coming meeting," and all old-time doctors from Arkansas, now practicing in other states, are expected to be on hand at the time indicated. This will be especially applicable to those desiring to attend the meeting of the American Medical Association at St. Louis, as they can stop off, renew old acquaintances and resume their journey.

THE TEXAS STATE MEDICAL ASSOCIATION will meet in El Paso, Texas, May 9, 10, 11, next.

THE OKLAHOMA STATE MEDICAL ASSOCIATION announces that the date of meeting has been changed to May 9-11.

MEDICAL ADVISERS NAMED. The Board of Directors of the Presbyterian Hospital announces the following as medical advisers of the institution: Drs. H. W. Kostmayer, T. M. Berry, and M. J. Lyons. Dr. Kostmayer was named as chairman of the committee, with Dr. Berry as secretary.

TULANE WILL SOON ADD NEW STRUCTURE TO GROUP. A new building to cost $50,000 will soon be added to the group of buildings on Tulane Campus. The new building will adjoin Gibson Hall, and it is expected to begin work immediately. Dr. A. B. Dinwiddie, president of the University, made this announcement at the Alumni Association meeting held in Gibson Hall, March 8. Dr. Dinwiddie also stated that the revenues for current expenses of the colleges comprising the University had more than doubled since 1915.

HONG KONG HAS FIRST CHINESE WOMAN PHYSICIAN. Dr. Hoashoo, M. B., Ch. B., a graduate of Edinburgh University, is the first of her sex to set up practice in Hong Kong. During the war Dr. Hoashoo served in hospitals at Bristol, England, and Edinburgh.

AUSTRALIAN PUBLIC HEALTH ASSOCIATION JOURNAL. At the first annual meeting of this association, it was decided to issue an official public health journal to be known as the *Bulletin of the Public Health Association.* The first number appeared in January.

ALABAMA CONTEMPLATES CHANGE IN HEALTH SYSTEM. According to reports, efforts will be made at the next meeting of the legislature to change the health system of the state. The proposed plan is to have the board of health composed of five or seven men appointed by the governor, part of the board to be physicians and part business men, their appointments to be confirmed by the senate.

THE "CARE OF THE BABY," a new and enlarged edition of a former publication of the same name, is contained in the recent number of the weekly Public Health Reports of the U. S. Public Health Service and is now being reprinted for general distribution. Its eminent practical character is shown in the section on bathing the baby.

AN ADULT NURSING SERVICE, as well as a Visiting Nurse Service for children is announced by the Child Welfare Association, as an aid to physicians of Orleans parish in their charity and semi-charity practice. The association has been sending nurses in homes where the welfare of children was imperiled by illness of adults, either through possible contagion, or through neglect. Such visiting nurses have been able to carry out physicians' instructions more skillfully than the family. Through the generosity of three women, one of whom attributes her life today to the skillful care of a Child Welfare Association nurse in the influenza epidemic, the salary of an Adult Visiting Nurse for three years has been guaranteed. This makes it possible for the Association to offer the service to physicians free to charity cases, and at a charge of $15 to semi-charity cases.

In this respect, it is like the Maternity Nursing Service, which the Association offers. Physicians who have charity or semi-charity cases may call upon the Association, Main 3512, Room 408 Maison Blanche Annex, for the services of a nurse at the time of delivery and for after-care. Where the fee for delivery is $50 or less, the Association will send a nurse for $10 to aid in the delivery, and for $5 additional to call daily and give after-care.

DONATION FOR CANCER RESEARCH. The American Society for the Control of Cancer, at its annual meeting held recently, made public facts concerning the first endowment fund ever granted to it. The family of Mrs. M. Lasker, New York City, together with other members of the family, have entrusted the society with the sum of $50,000 as a memorial fund in memory of Harry M. Lasker, who died of cancer on March 13, 1921.

TOURO APPOINTS NEW SUPERINTENDENT. Dr. John D. Spelman has been appointed to succeed the late A. B. Tipping as superintendent of Touro Infirmary. Dr. Spelman was formerly associate director of Mt. Sinai Hospital in Cleveland. On accepting the appointment Dr. Spelman said: "I hope Touro will continue just as it did before."

CIVIL SERVICE EXAMINATIONS. The United States Civil Service Commission announces open competitive examinations for the following positions: Reconstruction Aide; Reconstruction Assistant, (a) Physiotherapy, (b) Occupational Therapy. Those interested should apply for Form 1312, to the Civil Service Commission, Washington, or the proper authority in their district.

CARBON MONOXIDE. The U. S. Public Health Service states that carbon monoxide poisoning is one of the most widely distributed and most frequent of industrial accidents. The gas is without color, odor or taste. It is an ever-present danger about blast and coke furnaces and foundries. It may be found in a building having a leaky furnace or chimney or a gas stove without flue connection. The exhaust gases of gasoline automobiles contain from 4 to 12 per cent of the gas. A similar danger may arise from gasoline engines in launches. The gas is formed also in stoke-rooms, in gun turrets on battleships, in petroleum refineries, in cement and brick plants. In underground work it may appear as the result of hot firing, mine explosions, or mine fires, or in tunnels from automobile exhausts or from coal or oil-burning locomotives.

ALL RAILWAY SURGEONS OF THE STATE are urgently requested to attend the next regular meeting of the Louisiana State Medical Society in Alexandria, in April, when a meeting of the State Railway Association will be called for the purpose of sending two delegates to the American Railway Association at its next meeting. Dr. E. Denegre Martin, who is in touch with the association, will explain the purpose of the meeting. It is also proposed to reorganize the railways association which has been dormant since the beginning of the late war.

HEALTH BOARD ORGANIZED. The recently organized Claiborne Parish Health Board has elected the following members: Dr. J. W. Featherston, Homer, Parish Health Officer; with Drs. C. A. Bailey, Athens; Henry C. Baucum, Haynesville.

Raises Entrance Standard. The Board of trustees of the University of Pennsylvania, at a meeting held February 20, decided that beginning with 1923, a three years' collegiate preparation will be required for admission to the Medical School. The following year all students will be required to have either a college degree, or to have completed three years of college training, with the provision that the bachelor's degree will be given in the first year of medicine.

Polish Red Cross. The Polish Red Cross announces that a section has been organized in the republic created by the Soviet between Lake Baikal and the Pacific ocean. Under great difficulty it is accomplishing very useful work among the 40,000 Poles in Siberia, Manchuria and Mongolia. A Pasteur institute has been established under the supervision of the Polish Red Cross.

Eight Hundredth Anniversary. St. Bartholomew's Hospital London, England, is perfecting plans for the proper celebration of its eight hundredth anniversary. Rachire, in 1123, founded the hospital on its present site and received its first charter from King Henry I of England. The Prince of Wales is president of the hospital and the lord Mayor of London is chairman of the committee.

Gift for London School of Hygiene. According to the Minister of Health, the Rockefeller Foundation has offered $2,000,000 toward the costs of building and equipping a school of hygiene in London. A provision of the offer is that the British Government shall accept the responsibility for the appointment and providing of the staff and the maintenance of the school when established.

Hospital Again Changes Name. The name of the United States Public Health Service Hospital 61, at Fox Hills, Staten Island, N. Y., has for the third time been changed. It will in the future be known as United States Veterans' Hospital 61. The change was due to confusion between it and the United States Marine Hospital, also a Public Health Service Hospital.

General Education Board Announcements. Appropriations of $18,210,353 for colleges and universities, $12,029,513 for medical schools and $646,000 for colored education have been announced by the General Education Board during the fiscal year. A total of $89,017,872 has been appropriated by the board since its foundation by Mr. John D. Rockefeller. It is stated that Mr. Rockefeller has released the board from any obligation to hold any of his gifts in perpetuity.

PARIS HOSPITALS GET RADIUM. The expenditure of 2,500,000 francs ($183,750 at present rate of exchange), for the purchase of radium, to be used in the public hospitals for the treatment of cancer, has been authorized by the city of Paris.

REMOVALS. Dr. F. R. Brunot, from 2426 Beaufort Ave., Pittsburgh, Pa., to U. S. Marine Hospital, New Orleans.

Dr. J. N. Blume, from Jena to Arcadia, La.

Dr. J. M. Daniel, from Pt. Hudson to Slaughter, La.

Dr. J. H. Pankey, from Hodge to Ruston, La.

Dr. S. A. Poole, from Myrtis to Athens, La

PUBLICATIONS RECEIVED.

P. BLAKISTON'S SON & CO., Philadelphia.

Mind and Its Disorders, by W. H. B. Stoddart, M. D., F. R. C. P., fourth edition.

FUNK & WAGNALLS COMPANY, New York and London.

Lessons on Tuberculosis and Consumption, by Charles E. Atkinson, M. D.

WASHINGTON GOV'T. PRINTING OFFICE, Washington, D. C.

Annual Report of the Surgeon General of the Public Health Service of the United States for the fiscal year 1921.

United States Naval Medical Bulletin, Vol. 16, No. 1.

Public Health Reports, Vol. 37, Nos. 1, 2, 3.

MISCELLANEOUS.

Pneumonia, by Frederick Taylor Lord, M. D., Harvard University Press.

Transactions of the American Otological Society, Fifty-fourth Annual Meeting, Mercury Publishing Co.

Proceedings of the Fifteenth Annual Meeting of The Association of Life Insurance Presidents.

Some Statistical Reflections on the State of the Nation in 1921.

The Future Independence and Progress of American Medicine in the Age of Chemistry, a report by John J. Abel, Carl L. Alsberg, Raymond F. Bacon, F. R. Eldred, Reid Hunt, Treat B. Johnson, Julius Stieglitz, F. O. Taylor and Charles H. Herty, Chairman.

REPRINTS.

The abdominal Contraction Method Diagnosis. A New Duodenal Tube for the Study and Treatment of Diseases of the Duodenal and Biliary Passages, Gastrointestinal Disturbances in Affections of the Ocular Mechanism, Gastrointestinal Symptoms in Disturbances of the Thyroid, by L. Winfield Kohn, M. D.

Notes on a Case of Tubercular Leprosy Treated by Intravenous Injections of Stibenyl, by R. G. Archibald, D. S. O., M. D., Major, R. A. M. C. (Retd.).

Leismanniasis Cutánea Ulcerosa en la región oriental de la Peninsula Yucatan, by Dr. Vincente Rodriguez Arjona.

Public Health Reports No. 661.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for February, 1922.

CAUSE.	White.	Colored.	Total
Typhoid Fever	1		1
Intermittent Fever (Malarial Cachexia)		2	2
Smallpox	----	----	----
Measles	----	----	----
Scarlet Fever	----	----	----
Whooping Cough	----	----	----
Diphtheria and Croup	1	1	2
Influenza	7	8	15
Cholera Nostras	----	----	----
Pyemia and Septicemia	----	----	----
Tuberculosis	34	36	70
Cancer	35	7	42
Rheumatism and Gout		3	3
Diabetes	4	2	6
Alcoholism	1		1
Encephalitis and Meningitis	5	2	7
Locomotor Ataxia	----	----	----
Congestion, Hemorrhage, Softening of Brain	26	12	38
Paralysis	5	2	7
Convulsions of Infancy	2		2
Other Diseases of Infancy	15	4	19
Tetanus		1	1
Other Nervous Diseases	5	3	8
Heart Diseases	69	38	107
Bronchitis	2	1	3
Pneumonia and Broncho-Pneumonia	41	27	68
Other Respiratory Diseases	3	3	6
Ulcer of Stomach	3	1	4
Other Diseases of Stomach	2	1	3
Diarrhea, Dysentery and Enteritis	6	9	15
Hernia, Intestinal Obstruction	3	3	6
Cirrhosis of Liver	4	1	5
Other Diseases of the Liver	1		1
Simple Peritonitis	----	----	----
Appendicitis	2	1	3
Bright's Disease	16	10	26
Other Genito-Urinary Diseases	12	10	22
Puerperal Diseases	4	1	5
Senile Debility		1	1
Suicide	8		8
Injuries	14	9	23
All Other Causes	19	16	35
Total	350	215	565

Still-born Children—White, 17; colored, 12; total, 29.

Population of City (estimated)—White, 295,000; colored, 110,000; total, 405,000.

Death Rate per 1000 per annum for Month—White, 14.24; colored, 23.45; total, 16.74. Non-residents excluded, 15.05.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric temperature	30.12
Mean temperature	63.
Total precipitation	3.25 inches

Prevailing direction of wind, southeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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EDITORIAL.

STATE MEDICAL SOCIETY MEETING.

The forty-third annual session of the Louisiana State Medical Society was held in Alexandria on April 11 to 13, the House of Delegates opening its meetings on April 10. The total registration was 287, with 14 guests, the members' wives not included. Only 57 came from New Orleans. The attendance, as revealed by these figures, could not be called exactly satisfactory, but those present were attentive and interested, in this wise compensating for the deficiency and making the meeting an eminently successful one.

About fifty papers were on the program and there were scarcely any absentees among the readers announced; the discussions were numerous, as a rule to the point, and contributed largely to the interest of the sessions. Among the contributors were two distinguished guests, Dr. W. E. Sistrunk, now of Rochester, Minn., but formerly of New Orleans, and Prof. J. M. King, of Vanderbilt University, Nashville.

Under the able guidance of the president, Dr. J. E. Knighton, the various sessions were held pretty well on time, while the program was completed as per schedule, everything working smoothly and satisfactorily. The opening prayer was made by the Rev. O. W. Bradley, the address of welcome on behalf of the City of Alexandria by its mayor, the Hon. J. F. Foisy, and that on behalf of the local profession, by Dr. Fayette C. Ewing, an unusually brilliant effort.

Two of the sessions were open to the public, that of the first evening, given over to the section on public health and sanitation, and that of the second night, at which Dr. Knighton delivered his presidential address and the annual oration was made by Hon. J. R. Hunter, of Alexandria. The merits of these papers may well be enjoyed by our readers as we have the pleasure of printing them both in this issue.

A luncheon was tendered to the House of Delegates at the Baptist Hospital on the day of their first meeting and one daily to the general membership in the order named: by the United States Public Health Hospital, at former Camp Stafford; by Dr. Clarence Pierson, at Hot Wells, about sixteen miles from Alexandria; and by Dr. Jno. Thomas, at the Louisiana Hospital for the Insane, Pineville. At each the hospitality was cordial, the refreshments bountiful and excellent and the enjoyment was complete, being enhanced by the automobile rides to and fro over magnificent roads.

Additional entertainment consisted in an informal reception in the Italian Hall of Hotel Bentley, the first evening; a bridge-whist party for the ladies at the Rapides Club, the second afternoon, and what was called a stag smoker at Hotel Bentley, the last evening, which proved to be a delicious banquet, well attended and thoroughly enjoyed, a fitting climax to one of the very best meetings ever held by the State Society.

Of course the usual resolutions were passed thanking the various individuals and agencies that could be selected for special mention, but the truth is that the whole profession of Alexandria and the entire population of the City deserve our gratitude and the resolutions voice only feebly what all the members felt. Alexandria, as usual, did herself proud and the moment cannot come too quicky when it shall be time again to meet within her hospitable walls.

THE NEW PRESIDENT.

As announced elsewhere, Dr. Paul J. Gelpi, of New Orleans, was elected president of the Louisiana State Medical Society at the Alexandria Meeting. We disclaim the slightest desire to offer invidious comparisons but we say without hesitation that this was as happy a selection as could have been made and that it is rare indeed that one has been received with such a great degree of satisfaction and such general approbation.

Dr. Gelpi, at the height of his career, is young enough to be full of energy and activity yet old enough to have acquired executive experience and firm judgment. We feel satisfied that he will fulfill the duties of the office in such manner as to redound to his own credit and to the honor of the society.

TYPHOID FEVER.

It is quite comforting to glance over the Mortuary Report for March, in New Orleans, the last available and published in this number of the *Journal,* and to note that that there were no deaths from typhoid fever during that month. This is all the more satisfying in view of the comparatively recent localized outbreak in one section of the city not long ago which caused quite a flurry. Careful investigation by our local health officer finally traced the origin of the disease to a neighboring trucking region where vegetables had been handled in an unsanitary fashion. Guided by intelligent medical advice our people evidently took necessary precautions and the March report is the best evidence of the result.

New Orleans made a creditable showing regarding typhoid fever during 1921, as can be seen by studying the figures published not long ago in the *Journal of the American Medical Association,* but we are not yet among the top-notchers, hence we must all strive to place her there for 1922, notwithstanding the little flurry early in the year.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

PITUITRIN IN OBSTETRICS.*

By C. HAL CLEVELAND, M. D., Anniston, Ala.

The maternal mortality is the greatest medical crime of today. In this day of progress and scientific medicine the act of becoming a mother remains as deadly for the average woman as it was before the discovery of anesthesia and the introduction of aseptic methods. Women have always accepted the mortality and morbidity of childbirth as a sacrifice which they must lay on the altar of motherhood. This function of woman has ever been cloaked with fatalism and guided by ignorance. In women between the ages of fifteen and forty-five, childbirth is the second greatest cause of death, tuberculosis ranking first, and the fact that most maternal deaths are preventable should make every physician who undertakes to confine a woman give her his very best skill.

To see the infant pass from fetal slumber into the sleep of death, out of the amniotic sac of this world into the shroud, the amniotic sac of the next, is to the obstetrician who sets a value on infantile life both a humiliation and a reproach. To pass through the period of gestation in suspense, discomfort and inactivity, only to have the event terminate in a fatality, is to the mother a grievous affliction. Nevertheless, statistics show that out of every one hundred babies born, four to six die during labor or shortly thereafter.

Since the use of Pituitrin has become so common by the general practitioner and since its abuse and misuse are responsible for some of the maternal and fetal deaths of today, I think we may profit by a brief review of the indications and contra-indications for the use of Pituitrin in obstetrics. We are all agreed that properly used under proper conditions the extract of pituitary body has a distinct place and value in obstetrics. We must further recognize the fact that indiscriminate and improper use will only tend to relegate a good therapeutic agent to the discard.

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*Read before the Calhoun County Medical Society, Anniston, Ala., August, 1921.

Pituitrin, Pituitary Extract, Pitu-glandol, Hyophysin, Glanduitrin, are all names for the solution of the active principle of the posterior lobe of the hypophysis cerebri. It was in 1907 that Dale discovered that the administration of an extract of the infundibular portion of the hypophysis stimulated uterine contractions. In 1909 W. B. Beld first used it in labor, but it became better known in obstetrics when Hofbauer recommended its employment in uterine inertia. During 1911-18 German medical literature was full of eulogistic accounts of its marvelous action and nothing was said about its dangers. From Germany the use of Pituitrin in obstetrics spread like a scourge to all parts of the world. Finally the conservative South took up its use and today every physician is familiar with the action of this preparation. It is common knowledge that a few minims of Pituitrin given hypodermically to a woman in labor will, in the majority of cases, cause an increase in strength and frequency of uterine contractions. The effect lasts from thirty minutes to an hour and a half, depending on the patient and the preparation used. In some cases there is no appreciable effect, in others only a feeble action, and sometimes there is an unusual effect, such as tetanus of the uterus. Pituitrin will not produce an abortion, and only rarely, and in very large doses, will it bring on labor at term.

As to the indications for the use of Pituitrin one writer has this to say: ''In a healthy multipara with the cervix fully dilated and the membranes ruptured, with a head presenting normally and resting on a relaxed and easily stretched perineum, and the pains showing a tendency to lag, we have conditions as nearly ideal for the administration of Pituitrin as we can hope to find.'' We are all convinced that in the roomy unobstructed pelvis of a multipara with a normal position but weak and shallow pains in the second stage of labor, Pituitrin is a gift from heaven. Within a very short time slow, nagging labor pains may be converted into strong, vigorous, bearing down, expulsive pains. The dosage was formerly 1 c. c. but it has been greatly reduced by most obstetricians. One must study the temperament of his patient; it is best to begin with three or four minims and watch the effects. It is seldom necessary to give more than four or five minims at a dose, to be repeated about every thirty minutes.

Indications: (1) weak pains in the second stage of labor and occasionally near the end of the first stage if the cervix is dilatable. This is by far the most common indication. (2) In the second stage when the pains are weak and the patient is in ''twilight sleep'' or under an anesthetic. (3) In accidental hemorrhage—abruptic placentas—when the head is engaged and the membranes have ruptured. (4) Having changed a face into an occipital presentation strong pains are needed to force the occiput down on the perineum. (5) In the third stage after the delivery of the placenta, to cause retraction and contraction of the atonic uterus. (6) In post-partum hemorrhage from atony. (7) In puerperal stage where there are clots or pieces of placenta in utero. (8) In late puerperal hemorrhage. (9) In Cesarean section, directly into the muscle if the uterus does not contract promptly. (10) To control bleeding following curettage after miscarriage. (11) Some good results have been reported in cases of metritis and endometritis resulting from puerperal infection.

Contra-indications: (1) Contracted pelvis. (2) Malposition and malpresentation. (3) Tumors blocking the passage. (4) Diseased uterus, e. g., scars from previous section. (5) It should not be used early in labor when the cervix is closed or undilatable. (6) Cardiac disease with high blood pressure, since Pituitrin causes an increase in systolic pressure. (7) Eclampsia, for practically all these cases have high blood pressure. (8) Threatened asphyxia of the child in utero. Where the babe is already advancing laboriously and is somewhat stunned by the hardships of the way, where the os is incompletely dilated or some obstacle to progress exists, the attempt to hasten delivery by the use of Pituitrin may bring on tetanic contractions of the uterus and close the placental circulation and thus asphyxiate the child. Pituitrin should never be used without first listening to the fetal heart sounds; the danger signs are very slow, very fast, or irregular heart beats.

Among the bad results from the careless use of Pituitrin may be mentioned: (1) Perineal tears—and they are more common than most of us like to admit. (2) Lacerated cervices—many a cervix has been torn by too early administration of Pituitrin. (3) Pressure necrosis of the soft parts—this does not often happen. (4) Rupture of the uterus—a review of the literature on this subject reveals a number of these cases. (5) Asphyxiation of the babe by too prolonged uterine contractions—this accounts for a certain percentage of the infant mortality. (6) Cerebral hemorrhage or other cerebral disease.

There have been so many accidents reported that some men are advocating giving up the use of Pituitrin altogether. L. G. McNeil collected sixteen cases of ruptured uterus; DeLee adds four others. W. F. Grosvenor reports the case of a healthy young primipara, the fetus in the left occipito-posterior position, head firmly engaged, cervix partly dilated. Four minims of Pituitrin were injected, and at the end of thirty minutes five and one-half minims more were given. Collapse followed the second pain after the last injection. Death occurred and a complete uterine rupture was revealed at necropsy. A. F. Maxwell reports the following very interesting case: patient forty-four years old, pregnant for the eighth time with a fully dilated cervix with pains weak and far apart was given 1/3 c. c. of Pituitrin; the pains became more frequent and stronger; one and one-half hours later another 1/3 c. c. was given; immediately contractions began, the patient complained of air hunger, went into extreme shock and died within a few minutes. Necropsy revealed a ruptured uterus. A. W. Bourne relates this case.—Patient had had eleven normal easy deliveries; during twelfth labor, when the cervix was fully dilated and the head on the perineum, 1 c. c. of Pituitrin was given; one hour later the pains became extremely violent, the patient suddenly collapsed, the fetal head receded, and the pains ceased. Patient was dead within a few minutes; post mortem showed a five inch rent in the uterus.

Doubtless you have noted the fact that the cases reported happened in other doctors' practice. My own experience with the use of Pituitrin has been rather limited, consequently I have had to draw largely from medical journals on the subject. However, I fear that the uniformly good results obtained in the cases in which I have employed Pituitrin could easily lead me into trouble. My review of the literature on the subject has put me on guard, and I shall be more careful in the selection of my cases for the use of Pituitrin in the future.

In the face of such fatalities it would seem that it is time to sound a note of warning as to the dangers from the use of Pituitrin when employed injudiciously. We are led to conclude that Pituitrin may be used with impunity only in the presence of a clear-cut scientific indication after all the conditions have been fully met.

PROBLEMS TO BE SOLVED BY THE MEDICAL PROFESSION IN CO-OPERATION WITH THE PUBLIC.*

By J. E. KNIGHTON, M. D.

Many of the greatest advances made along the lines of public health and sanitary science have not been accomplished through the voluntary co-operation of the public with the medical profession, but under military control, or through orders from the national, state, or municipal governments. For justification of the above statement we have only to cite the miraculous accomplishment of General Gorgas in ridding the Canal Zone of yellow-fever and malaria, thus rendering that hot-bed of tropical diseases habitable for the Caucasian race, or the work of the National Public Health Service in co-operation with State and Municipal Boards of Health in controlling epidemics of yellow fever and plague in our own state, or the elimination of typhoid fever from our army by compulsory vaccination, or the transformation of small-pox from a loathsome and fatal disease occurring in extensive and uncontrolled epidemics to the well-recognized preventable disease that it is today through compulsory vaccination of children before being permitted to enter the public schools, and others during epidemics.

There are, however, other problems by which we as members of civilized society are confronted which can only be properly and finally solved by an awakened and intelligent public working in harmony with the medical profession. Some of these problems are the following, which I shall discuss briefly in the order named: The tuberculosis problem, the cancer problem, the problem of proper medical care and hospitalization of our rural population, and the venereal or so-called social disease problem.

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*Annual Address of the President La. State Medical Society, Meeting April 11 to 13, 1922.

THE TUBERCULOSIS PROBLEM.

In the beginning of a discussion of the tuberculosis problem, it should be stated that it is fully understood that at this time the public generally has been thoroughly aroused to a consciousness of the gravity of the situation. This has been accomplished through the Anti-Tuberculosis League and other agencies cooperating to disseminate a proper knowledge of the disease and of measures for its control. In this way the seeds have been sown which must ultimately bring the desired harvest.

Let us now view the situation as we find it in our state today. Notwithstanding the fact that there has been much done to advance the knowledge of tuberculosis among the public generally, there yet remains much to be accomplished in disseminating this knowledge among the poor, the illiterate, and the ignorant. One of the greatest dangers by which we are confronted is the prevalence of the disease among the negro race. It is from this race that we get the great majority of our servants, our chauffeurs, and the nurses of our young children, who are most susceptible to infection by this disease. Can we afford to be indifferent to the sanitary conditions and home life of the colored people when the safeguarding of our children from infection depends so largely upon these conditions? The average home of the colored family is not of the type to make it possible to properly care for the member of that family who is a victim of tuberculosis, and certainly not of the type to make it possible to protect the other members of that family from infection. What is true regarding the home life of the poor of the colored race is equally true of the poor of the white race.

In 1921 upwards of 2,000 deaths from tuberculosis were reported in our state. The number of individuals in the state who are suffering with active tuberculosis is many times greater than the number of deaths reported.

The question is, what are we doing to take care of this situation? The care of the tuberculous poor of our state is or should be the burden of the state. What is our state doing for the protection of her non-tuberculous population from infection by the tuberculous poor? There is some difference of opinion in the minds of leading members of the medical profession as to the value of climate in the treatment of tuberculosis, but all are agreed that proper care and education of the patient is far more important than climate in the treatment in any case, and that with proper care, any case of tuberculosis of the lungs may get well in any climate if taken in time. The wealthy and well-to-do may seek higher altitudes and dryer climates if they choose, but it is a tragedy, it is criminal to send a poverty-stricken victim of tuberculosis out of our own state to depend upon his own efforts for a livelihood among a strange and perhaps unsympathetic public of a distant climate. Let us again ask ourselves the question, what are we as a state doing to provide for our poor who are victims of tuberculosis? We have two charity hospitals, both of which are general hospitals and neither of which is properly equipped to care for tuberculous patients. In these hospitals we can not give these patients the best chance for recovery. It is not only an injustice to the patient to send him to our general charity hospitals, but we are likewise doing the non-tuberculous patients of these institutions an injustice by subjecting them to the danger of infection, as in many instances proper isolation can not be provided for. Our sister state, Mississippi, is spending a million dollars for the erection and equipment of a hospital for tuberculosis; why should we not profit by this splendid example and save ourselves from infection while we are doing the right and big thing of helping to restore our unfortunate poor victims of tuberculosis to health and happiness?

THE CANCER PROBLEM.

Through the efforts of the medical profession, together with statisticians and others who have worked on this problem in a scientific way, many of the mysteries and unknown phases of cancer have been brought to light and are now common knowledge among the medical profession and others who have given any attention to the subject. This knowledge should be in the hands of the general public and this object can only be accomplished through the co-operative efforts of those laymen who have become interested in the subject with the medical profession in teaching the general public what every one should know about cancer. When people generally are made familiar with the well-known facts about cancer, their co-operation may confidently be expected in our efforts to suppress this disease. Statistics have shown us that cancer is one of the most important causes of death. This disease causes one death out of every ten people who die after the age of forty years. The disease is steadily on the increase. In the United States the annual increase in the cancer death rate is approximately two-and-a-half per cent. In the two years and a half that the United States was engaged in the recent great war about 80,000 soldiers were killed or died of disease. During this same period cancer caused the death of 180,000 people in our country.

There are a number of other very important facts about cancer that every one should know. For instance, the modern knowledge that practically all forms of malignant growths are at first confined strictly to the locality in which they originate should displace the old idea that cancer is a blood disease and inherited from previous generations. Heredity has never been proven to be an important factor in the development of cancer. People should and must be taught that cancer in the beginning is purely a local disease and that the earlier proper treatment is instituted the greater and surer are the chances for permanent relief.

Every one should also know that cancer is not a germ disease and, therefore, not contagious. Those whose lot it is to care for an unfortunate victim of advanced cancer need have no fears of being infected from handling the dressings or coming in contact with the discharge from the diseased area. The ordinary rules of cleanliness and sanitation would require that discharges and soiled dressing be properly disposed of but not from a fear of being infected by cancer.

There are many other phases of cancer the gravity and importance of which would justify a much more extensive discussion, but time will not permit me to go into details at present.

Suffice it to say that valuable bulletins and other literature bearing on the subject may be secured from any board of health or from the American Society for the Control of Cancer.

THE PROBLEM OF PROPER MEDICAL CARE AND HOSPITALIZATION OF OUR RURAL POPULATION.

The problem of proper medical care of the rural population becomes more and more acute as the days go by. The progress of medical science has reached the stage that its requirements are so great in time and money that the number of young men and young women who are entering the medical profession is comparatively small. The minimum time after completing high school is two years of pre-medical college work, four years of medical college work and at least one year of hospital service, making an aggregate of seven years' time for preparation before the doctor is in a position to offer his professional services to the public. I would not be understood as taking the position that the requirements for preparation are too great. But the question is, will the young physician, after spending seven years with trained clinicians in hospitals and laboratories with all the equipment and facilities for doing work in keeping with the latest advances of real medical science, be satisfied to locate in some remote rural community where all these facilities are not available?

This question is being answered each year by the classes as they complete their hospital courses and seek locations in the cities where hospitals and laboratories may be found. Thus the ranks of the country doctor are growing thinner and thinner as the years go by. What is the remedy?

In my humble opinion the time has come when the people of the smaller towns and rural communities must come together and build and equip small community hospitals and co-operate and encourage the doctors of the community in organizing themselves into groups for the practice of scientific medicine. In this way, and in this way only, in my opinion, will the young physician, fresh from the source of the latest medical knowledge, be induced to return to his home community to practice his profession and give the community the benefit of its own home product.

In this way the community will not only help the young physician by providing the facilities for the proper exercise of his knowledge and further development of his talents, but the greatest service is to themselves in that they have made it possible to receive modern scientific treatment of their sick right in their own community without the expense and inconvenience of going to distant medical centers.

THE VENEREAL DISEASE PROBLEM.

There is no problem by which we as physicians and sanitarians are confronted which requires a more earnest and wholehearted co-operation on the part of the public, and particularly those who are leaders and moulders of public sentiment, than the venereal disease problem. The homes, the schools, the churches, the public press, the Chatauqua platform, and every available agency must be enlisted in the task of disseminating proper knowledge relative to the prevalence and disastrous results of these diseases. The public should know that a large percentage of the abdominal surgical operations on women is due to gonorrheal infections which have resulted from immorality on the part of the husband previous to the marriage. He was probably ignorant of the fact that he was capable of infecting others, for he believed that he had made a complete recovery from his original infection. Not only may the wife and mother suffer as a result of the youthful indiscretion and sowing of wild oats by the husband, but this hideous disease fastens its clutches upon the innocent offspring at the very threshold of life and destroys its sense of sight and thus takes from this innocent being the privilege of ever beholding the beauties of nature or even seeing the smile on the face of its own mother. This disease is the cause of sterility in thousands of men and women, thus rendering them incapable of performing that most sacred and holy function of parenthood.

What has been said regarding gonorrhea would apply with equal force to syphilis. In addition to this, the remote results of syphilis are without limit since early in the course of the disease, the infection enters the lymph and blood streams and is carried to every tissue of the body. Unlike cancer and tuberculosis, it is capable of being transmitted from parent to offspring and thus it becomes a hereditary disease. It is literally true that the sins of the fathers may be visited upon the children unto the third and fourth generations.

These are tragic and unpleasant things to contemplate, but the sooner we face the facts as they exist the sooner may we set in motion the proper machinery to correct at least some of our social defects.

Some may argue that sin and immorality have existed since the beginning of human history and will continue to the end of time, but if this be true, it does not relieve us of our obligation to point out the dangers and pitfalls that the uninformed know not of.

May the day soon come when health certificates are required as a prerequisite to marriage, and may popular sentiment soon banish from the face of the earth the double standard of morals for men and women. "Be not deceived, God is not mocked; for whatsoever a man soweth that shall he also reap."

ANNUAL ORATION.*

By the HONORABLE J. R. HUNTER, Alexandria, La.

I must first make grateful acknowledgement of my appreciation of the kind invitation which permits me to address you. I feel sure that the arrangement committee were not led into selecting me by virtue of any talents that I possess, but rather because they knew that there were few persons who had been more intimately associated with, and few more devoted to, the medical profession than the one chosen to address you. In confessing my devotion to the doctors, I would have you know that I attribute my present health and being, in a large measure, to the intelligent action and unselfish devotion of those doctors who have served me, in time of need. I have gone into the "Valley of the Shadow of Death" with doctors at my side, I have gone calmly, coolly and confidently. I have come out of the valley of sickness and mounted the hill tops of health, and brought back with me a deep devotion to the doctors.

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*Delivered before the Louisiana Society Meeting, April 11 to 13, 1922.

I have searched the great orators and studied the poets in vain, that I might pay a better, if borrowed, tribute to your profession. But I have found that neither the silver tongue of the orator, nor the measured rhythm of the poet have been employed to pay anything but a passing tribute to the medical profession, which, next to the ministers of God, contribute more to the service of his fellow men. So, while I lack the aid of precedent and the advantage of quotation, I am determined to offer my humble tribute, hoping that it may win your appreciation, notwithstanding the poverty of its expression, and because of the sincerity of the love that dictates it.

I think that next to those holy men and women who surrender all in the service of the sinful and suffering, the doctor performs the highest mission in life. His work is so self-sacrificing, so utterly unselfish, that it is next to the divine.

To other men of other professions is given the privilege of relieving men's necessities, adjusting their differences and solving their problems, but to the doctors is confided the more sacred task of alleviating suffering and preserving and prolonging human life.

It is the doctor that comes when the darkness of despair rests over the home, and like a ministering angel brings comfort and cheer and drives disease away. He not only gives the cup of water to the poor, but he cools the fevered brow, soothes the aching limb and sets the roses of health to bloom in pallid cheeks. He gives until it hurts. No day is too long; no night too dark; no weather too bad; no way too weary to arrest his step or diminish his kindly interest. He is not a fair-weather friend. He does not choose the prosperous and the proud upon whom to spend his talent. To the poor he is prodigal with his gifts of service. He is truly a servant in the Vineyard of the Lord, an uncomplaining servant, for he goes whenever called and every hour is his hour, without regard to pay. From the cradle to the grave he is the guardian angel of our health.

An age of poetry produced a Homer; of art a Raphael and an Angelo; of discovery a Columbus and a Magellan; of invention an Edison and a Marconi; of eloquence a Webster and a Clay, but in all ages great doctors have lived, and in each of them made generous contributions to the health and happiness of mankind. Their fame is not confined to one age, to one time, but belongs to all nations and is part of all ages. The doctors have not only laid bare the anatomy of man, but have taken up arms against a multitude of human ills and conquered them. The great fevers no longer scourge mankind, for medical science has discovered their cause and found a remedy. In surgery, as in medical science, the profession has made the greatest strides. Disease which formerly hid itself in the innermost recesses of the human form has been discovered and eradicated by the surgeon's knife. It is my firm belief that the great white plague and the curse of cancer which have numbered countless victims will shortly bow before the research and skill of the modern doctor.

But I come to talk to you of an American ailment, of a governmental sickness, of a disease which is attacking the Constitution of our Country. I wish to briefly direct your attention to the cancer of centralization, in the hope that I might engage the attention and awake the interest of those who, accustomed as they are to saving us from bodily ills, may help us in saving the nation from the perils of paternalism.

"I believe the unmistakable danger that threatens free government in America is the tendency to concentrate in the federal government, powers and privileges that should be left with the states, and to create powers that neither the states nor the federal government should have.

"The splendor of a central government dazzles the unthinking, its opulence tempts the poor and avaricious. Its strength assures the rich and the timid, its patronage incites the spoilsmen, and its power inflames the partisan. The merchant asks the government to control the arteries of trade, the manufacturer asks that his product be protected, the rich ask for an army and the unfortunate for help, this man for school, and that for subsidy. Thus the states are dwarfed and the nation magnified—and to govern a people who can best govern themselves the central authority is made stronger and more splendid."

Speaking on this subject in a recent address, Senator Stanley of Kentucky, said: "Wise and patriotic men of all parties are today vividly conscious of the fact that we stand at this hour upon the edge of the abyss, that the abolition of the autonomy of the State means the destruction of the liberty of the citizen and the life of the republic.'' Thoughtful men are no longer concerned with the mooted political questions of states rights, no longer do we contend for the right of a State to secede, but the larger right of the State to exist.

How is this insidious cancer of centralization growing daily more dangerous? Let history answer the question.

For a century after the adoption of the Constitution sages and patriots stood watch and guard against the imminent and admitted peril of federal aggression. In the course of one hundred and nine years the Constitution suffered but three amendments and a great civil war wrote them. From 1804 to 1913, these civil war amendments were the only ones written by the people of this nation. But the cancer of centralization, the spirit of paternalism had silently spread over the body politic, and in seven years, without a protest, we have permitted the federal government to grow stronger through four amendments to the Constitution—viz., the income tax, direct election of senators, the prohibition amendment and women suffrage. Analyze them and each of them, and you will find that the fact of their adoption has impaired the sovereignty of the State and lessened the influence of the citizen.

''Now, I want to submit, that whenever, by amendment or otherwise, you make a central government, and not the citizen, the source and repository of power, you will not have amended but you will have abolished the Constitution of the United States. What is the result of these amendments? Thousands of federal agents and inspectors are abroad in the land. Every business man finds a federal agent at his elbow, a federal sleuth at his heels; houses are searched and home invaded, and the highways are no longer safe to travel. They are more numerous and pernicious than the fleas and frogs of Egypt.''

You doctors must appreciate receiving a number like convicts before you are permitted to prescribe certain drugs which the federal agent directs. It must be a great satisfaction to you to be told how many prescriptions you may have and how much of a given article you may prescribe. It seems to me that the amendment under which this deprivation of your personal liberty is accomplished furnishes a fair sample of what centralization of power in Washington may mean.

I was interested to read that on the 4th of July, 1776, certain patriotic Americans wrote a document known as the Declaration of Independence. History records the fact that these men protested against the oppression of an unjust king. If, for no other purpose than to show how history repeats itself, let me say that one of the charges in the indictment against this king was to the effect "He has created a multitude of new offices and sent hither swarms of officers to harass our people and eat out their substance." What these men fought against in 1776, we silently suffer in 1922. One of the serious objections to amending the Constitution lightly is the fact that once amended, it is difficult if not impossible to repeal the amendment, for a minority can prevent the repeal. Study the last census and you will see that there are five million people scattered over thirteen States; yet it might be that the other one hundred and fifteen million people of the United States might want to repeal an amendment to the Constitution, but their will can be defeated by the will of the five million residing in these thirteen States. If the amending habit is dangerous, if these centralizing amendments are a disease like cancer and feed upon the vitals of Americanism, then what remedy have we to offer? I would suggest your honest opposition to every amendment which destroys State rights or lessens the sovereignty of the citizen. Second, to oppose all laws which permit or tend to provide for centralization of power in Washington and government by bureau. Third, preach the gospel of local self-government. Fourth, exalt the citizen and preserve his rights under the Constitution as it was originally written. I would do all these things, "not in deprecation of the federal government, but to its glory, not to weaken the republic, but to strengthen it; not to check the rich blood which flows to its heart, but to send it full and wholesome from healthy members rather than from diseased extremities." Let us not lean on the State for anything we can do and on the government for nothing that the State can do. Let us go back to the faith of our fathers, let us stand by these old-fashioned beliefs, let us preserve the Constitution which we inherited for it was a sacred inheritance.

For the purpose of pointing a moral and adorning this tale, I will add a brief story told by Grady of Georgia:

"A soldier lay wounded on a hard-fought field; the roar of the battle had died away, and he rested in the deadly stillness of its aftermath. Not a sound was heard as he lay there, sorely smitten and speechless, but the shriek of wounded and the sigh of the dying soul, as it escaped from the tumult of earth into the unspeakable peace of the stars. Off over the field flickered the lanterns of the surgeons with the litter-bearers, searching that they might take away those whose lives could be saved and leave in sorrow those who were doomed to die with pleading eyes through the darkness. This poor soldier watched, unable to turn or to speak as the lanterns drew near. At last the light flashed in his face, and the surgeon, with kindly face, bent over him, hesitated a moment, shook his head, and was gone, leaving the poor fellow alone with death. He watched in patient agony as they went from one part of the field to another.

"As they came back, the surgeon bent over him again. 'I believe if this poor fellow lives to sundown tomorrow, he will get well,' and again leaving him, not to death, but with hope; all night long these words fell into his heart as the dew fell from the stars upon his lips, 'If he but lives till sundown, he will get well.'

"He turned his weary head to the east and watched for the coming sun. At last the stars went out, the east trembled with radiance, and the sun, slowly lifting above the horizon, tinged his pallid face with flame. He watched it inch by inch as it climbed slowly up the heavens. He thought of life, its hopes and ambitions, its sweetness and its raptures, and he fortified his soul against despair until the sun had reached high noon. It sloped down its slow descent, and his life was ebbing away and his heart was faltering, and he needed stronger stimulants to make him stand the struggle until the end of the day had come. He thought of his far off home, the blessed resting in tranquil peace with the roses climbing to its door, and the trees whispering to its windows and dozing in the sunshine, the orchard and the little brook running like a silver thread through the forest.

" 'If I live till sundown, I will see it again, I will walk down the shady lane; I will open the battered gate, and the mocking bird shall call to me from the orchard, and I will drink again at the old mossy spring.'

"And he thought of the wife who had come from the neighboring farmhouse and put her hand shyly in his, and brought sweetness to his life and light to his home.

" 'If I live till sundown, I shall look once more into her deep and loving eyes and press her brown head once more to my aching breast.'

"And he thought of the old father, patient in prayer, bending lower and lower every day under his load of sorrow, and old age.

" 'If I but live till sundown, I shall see him again and wind my strong arms about his feeble body, and his hands shall rest upon my head while the unspeakable healing of his blessing falls into my heart.

"And he thought of the little children that clambered on his knees and tangled their little hands into his heartstrings, making to him such music as the world shall not equal or heaven surpass.

" 'If I live till sundown, they shall again find my parched lips with their warm mouths, and their little fingers shall run once more over my face.'

"And he then thought of his old mother, who gathered these children about her and breathed her old heart afresh in their brightness and attuned her old lips anew to their prattle, that she might live till her big boy came home.

" 'If I live till sundown, I will see her again, and I will rest my head at my old place on her knees, and weep away all memory of this desolate night.' And the Son of God, who died for men, bending from the stars, put the hand that had been nailed to the cross on the ebbing life and held on the stanch until the sun went down and the stars came out and shone down in the brave man's heart and blurred in his glistening eyes, and the lanterns of the surgeons came and he was taken from death to life."

The world is a battlefield strewn with the wrecks of governments and institutions, of theories and old faiths, that have gone down in the ravage of years. On this field lies America sown with her problems. Upon this field swing the lanterns of God. Amid the carnage walks the Great Physician. Over our country he bends. "If ye but live until tomorrow's sundown, ye shall endure, my countrymen." Let us, for her sake, turn our faces to the east and watch as the soldier watched for the coming sun. Let us stanch her wounds and hold steadfast. The sun mounts the skies. As it descends, let us minister to her and stand constant at her side for the sake of her children and of generations unborn that shall suffer if she fails. And when the sun has gone down and the day of her probation has ended and the stars have rallied her heart, the lanterns shall be swung over the field and the Great Physician shall lead her up from trouble into content, from suffering into peace, from death to life.

NOTES ON TROPICAL DISEASES.

(From the Bulletin de l'Académic de Médecine, Paris.)

By LODILLA AMBROSE, Ph. M., New Orleans.

TYPHUS.

Nicolle(1), in reporting on the serotherapy of typhus exanthematicus, referred to his preliminary note to the Academy of Sciences, April 3, 1916, on the preparation of the serum. He inoculated the ass and the horse intravenously with the suprarenal capsules and spleen of the guinea-pigs kept for the conservation of the virus, one capsule and half a spleen being given in emulsion each time (inoculation every 3 or 4 days for about 15 months). At that time favorable results in 19 patients were reported. This later report was based on 38 cases: 22 French, 9 native Tunisians, 7 Serbs. There was one death, a tubercular case with multiple phlegmon due to injections of camphorated oil. The severity of typhus was found to vary with the epidemic, the care, and the race. Among the Serbs at Bizerte the course was benign, and the serum was used only in 7 desperate cases. With the French it is severe. Of 3 Frenchmen in the service of Potel at the marine hospital of Sidi-Abdallah (Potel's report was presented by Nicolle) before the serum was used, 2 died. In the 31 cases treated with serum by Potel other fevers were carefully excluded in the diagnosis. Potel announced favorable results:

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(1) **Nicolle, Charles, and Blaizot, Ludovic. Sur les résultaes de la sérothérapie dans le traitement du typhus exanthématique.**

1. In action on the temperature (the continued temperature of 40° either does not appear or ceases suddenly after the first injection);

2. Action on the nervous symptoms (cerebral and paralytic symptoms do not occur or disappear rapidly);

3. Action on general condition (tongue, heart, kidneys, intestines specified, and more rapid convalescence);

4. Action on the duration of the disease (classic notion 14 days, average of 31 cases 11.61 days);

5. No complications;

6. Action on severity of disease (mortality according to Murchison 22.03 per cent., Barrailer 33.48 per cent., Jacquet 50 per cent., in these 31 cases 3 per cent).

Potel gave also rules for the use of the serum:

1. Use at beginning;

2. Renew inoculations daily until defervescence is obtained (several days required before effect of treatment is felt);

3. Use 10 to 20 cc. per day hypodermically;

4. Accompany with medical treatment to favor elimination of bacterial toxins and residues of these reactions (hot diuretic drinks, hot baths, stimulants, cardiac tonics).

Poirson confirmed these conclusions from his 7 Tunisian cases. Full details are to be published. No one in the service of Potel was infected, for each patient was perfectly cleaned from lice before admission.

Pétrovitch(²) gave a résumé of personal observations of the epidemic of typhus exanthematicus in Serbia, September, 1914, to July, 1915, terming it the most severe ever known in Europe. He emphasized the masking of the characteristic typhus symptoms in the early months by other epidemics, as typhoid, la grippe, mumps, thus affording the lice time to become infected and to spread the typhus. The French medical mission was very effective in the destruction of the lice, but the epidemic focus was not completely extinguished. Profound asthenia was characteristic of the Serbian cases.

CHILDREN.

Kermorgant(¹) began by saying, "The vitality and prosperity of a country rests on the economy of human lives." He then gave an account of the measures taken for the protection of native infants in the French colonies other than those of North Africa. In general, these included vaccination, orphanages, clinics for mothers and infants with care during pregnancy and at parturition, training native midwives. He stated that "in black society there are no abandoned infants; if a child is found without family it is brought up in the village of its origin, being received by either elderly people or those having no children."

The dangers to infants are those of ignorance and uncleanliness (babes of a few days are fed a mixture of rice, manioc, yam, banana, chewed and blown from mouth to mouth; tuberculosis and syphilis are thus communicated to healthy children), of insufficient clothing resulting in broncho-pneumonias and parasitic infections, and of superstitious treatments.

Mothers usually nurse their children.

Martinique has at Fort-de-France an institute of hygiene and microbiology. In Guadaloupe infants have little protection. In French Guiana malaria causes many still-births. Réunion has a high infant mortality from malaria and tetanus, and the popu-

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(2) Pétrovitch. Considérations épidémiologiques et cliniques sur l'épidémie de typhus exanthématique au cours de la guerre en Serbie.

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(1) Kermorgant. Protection de l'enfance indigène dans les colonies autres que l'Algérie, le Maroc et la Tunisie. 3. s., ixxv, 178-195.

lation resists the use of quinin. Leprosy is very frequent in New Caledonia, affecting a fifth of the native population; a large number of native and European children are manifestly leprous, and yet no measure has been taken to keep sound and leprous children apart. Abortion is practised extensively. In Tahiti and the Marquesas Islands nothing has been done to protect infancy. In some districts of the Marquesas Islands the death rate is three times the birth rate (syphilis, leprosy, tuberculosis, alcoholism). In Senegal there is a high rate of infant mortality (diarrhea, insufficient clothing, defective nutrition); the administration has founded dispensaries, a model maternity hospital, orphanages. In Upper Senegal and Niger abandoned half-breed infants constitute a special problem (two orphanages). Mauritania has a high infant mortality (hereditary syphilis, malaria, broncho-pulmonary affections). In the other colonies of French West Africa (Guinea, Ivory Coast, Dahomey) practically no works for the protection of infancy exist. The same is true of equatorial Africa. On the Somali Coast the infants are specially endangered by the custom of supplementing mother's milk with raw goat's milk, the goats as a rule being infected with Malta fever.

European efforts at betterment are nullified by religious superstitions.

In the French establishments in India infant mortality is considerable (tetanic convulsions due to poulticing cord with earth and cow-dung, diarrhea, small-pox, cholera, malaria, lumbricosis, tuberculosis, syphilis) with a high percentage of still-births.

In Madagascar infants are affected by syphilis, malaria (free distribution of quinin now), small-pox (vaccination campaign), tetanus, and diseases of the respiratory tract. The measures undertaken have been legal (regulation of marriages), financial (tax on bachelors, exemption from taxation of fathers of five children, exemption of all fathers from military service), political (annual fête for children and gifts to mothers of most numerous families), medical (school of medicine, hospitals, dispensaries, orphanages).

Indo-China has numerous orphanages, crèches, some maternity hospitals. Factors in high infant mortality are umbilical tetanus (sterilized dressings in sealed packages now distributed to midwives, with curved scissors not suitable for ordinary cutting), defective feeding, cholera, malaria, plague, small-pox.

Of all the French colonies, Madagascar and Indo-China have done most for protecting infancy.

Pinard(2) discussed and commended the presentation made by Kermorgant, and he emphasized the necessity of will (*la volonté*) in dealing with these problems.

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(2) Pinard, A. Discussion de la communication de M. Kermorgant, sur la protection de l'enfance indigène dans les colonies autres que l'Algérie, le Marcc et la Tunisie.

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY.*

During the present meeting of the Louisiana State Medical Society, the House of Delegates has held three meetings. The Council has also been in session, and attended to all matters which were presented to them.

The House of Delegates had numerous vexing and interesting subjects for consideration, which were disposed of expeditiously after due deliberation and consideration by the body, the most important of which are presented to you for your information.

The report of the Secretary-Treasurer showed a membership in the last year (1921) of 1113. Present enrollment for the year 1922 is 942, which we consider a very satisfactory evidence that we have an opportunity of exceeding our membership this year in comparison with that of 1921.

Dr. J. E. Knighton, the President, presented an unusual report covering the various activities surrounding his office. According to his recommendations the Constitution has been amended in which our scientific program will be lessened six papers, three from the section on medicine and three from the section on surgery.

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*Read before the Louisiana State Medical Society Meeting, April 11 to 13, 1922

One of the new features of our entertainment this year has been the exhibition and presentation of a scientific display under the auspices of a special committee appointed by the President, chairman, Dr. Leon J. Menville. These exhibits were also assisted by the work of the local committee, chairman, Dr. E. M. Levy, Alexandria.

Charters were granted two parishes, Jefferson Davis, in the seventh congressional district, and Red River, in the fourth district.

The Committee on Cancer Control after making a most thorough report, upon recommendations of said committee, will hereafter be incorporated in our Committee on Health Problems in Education. Upon recommendations of this committee the sum of $140.00 was appropriated to the State Cancer Control Committee of the State Board of Health, Dr. Oscar Dowling chairman.

The report of the Committee on Budget and Finance is very extensive covering the minute details of the financial status of our organization. The business of this has been taken care of by the House of Delegates.

After the Committee on Public Policy and Legislation made a report it was moved, duly seconded and carried that concerning the last section of resolutions recently sent out by the Committee on Public Policy and Legislation this House of Delegates denies any intention to exercise any such privilege on the part of the State Society and disapproves of any such efforts.

It was also duly moved and carried that the Executive Committee be empowered to appropriate any sum of money, as they may deem necessary and wise, to further the cause of having the physician's occupational tax repealed and other legislative matters which may come up for attention by this committee.

After the report of the Committee on Journal, upon motion duly seconded and carried, the entire matter with reference to the purchase of the *New Orleans Med. & Surg. Journal* was referred to the Executive Committee with instructions from the House of Delegates to investigate thoroughly and immediately the status of the A. M. A. fund, and then in their judgment to dispose of the money as best in their wisdom; that if a sufficient fund be found available the Executive Committee have the authority to act upon the report submitted by the Committee on the Journal.

Amendment to the Constitution, Article 7, Section 3, was duly proposed and finally carried, after laying over 24 hours, that scientific papers shall be arranged under two principal sub-divisions, Surgery and Medicine, and that under these two main sub-divisions the papers from the various sections be arranged and interspersed according to the subject-matter.

An amendment to Article 6 of the Charter was duly proposed, which will have to lie over for one year, providing for our retiring President as Councillor at Large for a period of one year.

The question of Health Certificates as a pre-requisite to marriages, in the State of Louisiana, was discussed extensively, and after due consideration, the subject-matter was referred to the Committee on Public Policy and Legislation for investigation and report of recommendations to the Executive Committee.

It was moved, duly seconded and carried, that the U. S. Public Health Service Medical Officers, residing in the State of Louisiana, be accorded the courtesy of becoming associate members of their local society and likewise of the State Medical Society.

The question of a plan of action concerning the physician's occupational tax was offered, and after mature discussion, the House of Delegates instructed our Committee on Public Policy and Legislation to meet as soon as possible, so that a report of this plan could be submitted and not conflict with other activities in this direction.

The following resolutions were offered by the Committee on Resolutions and adopted:

Whereas, Those in attendance upon the meeting of our State Society have profited to the utmost by the courtesy and consideration shown them, we submit the following:

Be it resolved, That our thanks be extended to the profession of Alexandria and of Rapides Parish, to the Committee on Arrangement and Entertainment, and especially to the local chairman, Dr. Clarence Pierson, for his energetic and painstaking effort. Also to the Rapides, Country, Elks and Community Clubs for the privileges afforded us.

Be it further resolved, That we extend thanks to Mr. Appel, the manager of the Hotel Bentley, his assistants and employees, for the polite service and uniform courtesies extended to us.

Be it further resolved, That we are deeply appreciative of the delightful luncheons served by the Baptist Hospital, the U. S. Public Health Hospital at Camp Stafford, the Hot Wells management, and the Louisiana Hospital for the Insane at Pineville.

Be it further resolved, That our thanks be extended to the medical and lay press, especially to the *New Orleans Medical & Surgical Journal* and the Alexandria Town Talk for the privilege of their columns and the kind consideration shown us; also to those in charge of the Chamber of Commerce and the City Hall of Alexandria, especially the Saenger Amusement Company, for courtesies extended.

We could not close this report without expressing our appreciation of the efforts of the Committee on Scientific Exhibits and the exhibitors and hope that this will be made a strong feature of future meetings.

We are under a debt of gratitude to our earnest secretary-treasurer, Dr. P. T. Talbot, and his assistants, for their untiring efforts to make our meeting so successful, and to them we extend our sincere thanks.

Respectfully submitted,

A. A. HEROLD, Chairman.
ELIZABETH BASS, M. D.,
S. L. WHITE, M. D.

Reports of all committees, with the exception of two, were disposed of by the House of Delegates.

The following officers for the year 1922-1923 were duly nominated and elected according to our Constitution and By-Laws:

President, Dr. Paul J. Gelpi, New Orleans; 1st Vice-President, Dr. G. M. G. Stafford, Alexandria; 2nd Vice-President, Dr. Chas. V. Unsworth, New Orleans; 3rd Vice-President, Dr. C. P. Gray, Monroe; Secty-Treas., term of two years, Dr. P. T. Talbot, New Orleans; Councilor, 1st Congressional District, Dr. S. M. Blackshear, New Orleans, 2 years; Councilor, 2nd Congressional District, Dr. G S. Bel, New Orleans, 2 years; Councilor, 3rd Congressional District, Dr. F. T. Gouaux, Lockport, 1 year; Councilor, 4th Congressional District, Dr. A. A. Herold, Shreveport, 2 years; Councilor, 5th Congressional District, Dr. T. E. Wright, Monroe, 2 years; Councilor, 6th Congressional District, Dr. L. J. Williams, Baton Rouge, 1 year; Councilor, 7th Congressional District, Dr. E. M. Ellis, Crowley, 1 year; Councilor, 8th Congressional District, Dr. S. J. Couvillon, Moreauville, 1 year.

Dr. E. L. Leckert, was nominated for vacancy on the State Board of Medical Examiners, along with the name of Dr. Geo. S. Bel.

Committee on Scientific Work—Drs. P. T. Talbot, Hamilton, P. Jones and Elizabeth Bass, New Orleans.

Committee on Public Policy and Legislation—Drs. Paul Gelpi, Homer Dupuy, W. H. Block, W. D. Phillips and P. T. Talbot, New Orleans.

Committee on Publication—Dr. Amédée Granger, New Orleans; Dr. F. J. Gremillion, Alexandria, and Dr. P. T. Talbot, New Orleans.

Committee on Medical Education—Dr. F. T. Gouaux, period of 3 years; Dr. B. W. Smith, Franklin; Dr. C. W. Allen, New Orleans.

Committee on Medical Defense—Dr. R. O. Simmons, Alexandria; Dr. J. C. Willis, Shreveport, and Dr. P. T. Talbot, New Orleans.

Committee on Hospitals—Dr. P. Graffagnino, New Orleans; Dr. L. Menville, New Orleans; Dr. R. O. Simmons, Alexandria; Dr. E. M. Ellis, Crowley; Dr. C. M. Horton, Franklin.

Committee on Health and Public Instruction—Dr. E. L. Leckert, New Orleans; Dr. T. A. Roy, Mansura; Dr. W. H. Seemann, New Orleans; Dr. J. M. Moseley.

Delegate to the A. M. A., for 2 years, vice Dr. L. R. DeBuys, Dr. W. H. Block, New Orleans; Alternate, vice Dr. T. A. Roy, Dr. T. A. Roy, Mansura, La.

Dr. Leon J. Menville, New Orleans, was unanimously chosen the next Chairman of the House of Delegates, 1922-1923.

Next place of meeting will be New Orleans, date of which will be set by the Executive Committee at their meeting within 30 days from this date, in New Orleans.

Registration at Alexandria meeting, to date:

Members	227
Guests	55
Total	282

Respectfully submitted,

P. T. TALBOT,

Secretary-Treasurer.

TRANSACTIONS ORLEANS PARISH MEDICAL SOCIETY.

Annual Meeting, January 9, 1922.

REPORT OF THE SECRETARY FOR 1921.

To the Officers and Members,
Orleans Parish Medical Society:

I beg to submit the following report of the transactions of the Secretary's office during 1921:

Sixteen meetings were held during the year, of which ten were scientific, three were clinical, and three were general executive meetings. The approximate attendance at scientific and clinical meetings was about 90, at executive meetings about 22. A total of 39 cases were presented by various members of the Society at the clinical meetings.

Thirty-three papers were read during the year, twenty-three of which were original articles. Ten were reports of the various scientific sections of the Southern Medical Association meeting.

The reporting of the scientific sections of the Southern Medical Association was an innovation this year by the Scientific Essays Committee and proved to furnish one of the most interesting and instructive meetings of the year. I would suggest that this be repeated in the future and also that similar reports be made following the annual meeting of the American Medical Association.

Membership: The membership at the close of the year 1921 is:

Active members	392
Associate members	22
Honorary members	19
Removed from city during year	17
Dropped through delinquency	5
(Four active members; 1 associate member)	
Loss—by death	7
Gained—Active members	16
Associate members	2

Two applications for active membership were rejected.

Business: The Society has been called upon by different civic organizations to advise and confer with them on various matters vital to the welfare of the public at large. In this connection I might state that we were called upon in regard to the moving of the quarantine station from the mouth of the river to Jackson Barracks. Also in regard to the telephone service rate increase. Our Committee, specially appointed, conferred with Commissioner Ray in regard to allowing a special time limit for the parking of physicians' cars. Dr. John Callan handled this situation to a great advantage.

We were also called upon for representation at a meeting of the New Orleans Association of Commerce relative to the disposal of city garbage.

Narcotic Clinic: The abolishment of the Narcotic Clinic was one of the most important pieces of work that the Society was called upon to take part in, and this, as you know, was handled in a most satisfactory manner by Dr. J. B. Elliott, and Dr. I. I. Lemann.

Occupational Tax: During the year efforts were made to have the Physicians' Occupational Tax abolished, in interest of which Dr. W. H. Block was appointed to represent the Society at the Constitutional Convention in Baton Rouge.

By-Laws: One of the most important committees of the year was that on the "Revision of the By-Laws of the Society," Dr. W. H. Block, Chairman. The By-Laws were printed and copy sent to each member of the Society. An expression of thanks from the Society has been tendered the Chairman and members of this Committee for their diligent work in this connection.

The Secretary, at this time, would like to call attention to the fact that Dr. John Callan had the first copies of the revised By-Laws mimeographed, at his own expense, saving the Society a considerable sum.

New Orleans Medical and Surgical Journal: Our Special Committee on the purchase of the N. O. Medical and Surgical Journal—Dr. W. H. Seeman, Chairman—deserves mention for their valuable work and report to the Society in this regard. An expression of thanks has already been given this Committee from the general Society.

Scientific Essays Committee: Since the success of our Scientific and Clinical meetings is largely dependent upon the working of the Scientific Essays Committee, I desire to specially call attention to the excellence of the programs during the past year. Dr. J. B. Guthrie, Chairman of the Committee, worked hard and faithfully and gave us both quantity and quality.

Delegates, Louisiana State Medical Society: The following delegates and alternates, to the Louisiana State Medical Society, were elected during the year, for a term of two years: Delegates: Drs. S. M. Blackshear, W. H. Seeman, Homer Dupuy, E. L. Leckert, P. Graffagnino, E. L. King.

Alternates: Drs. S. C. Jamison, C. G. Cole, F. M. Johns, E. A. Fossier, Allan Eustis, J. J. Irwin.

Additional Stenographer: The demands of the combined offices of the Louisiana State Medical Society and the Orleans Parish Medical Society became such as to necessitate an addition to the clerical staff. This position is being filled very satisfactorily by Miss Bessie Dillon.

Thanks: In conclusion, I desire to express my sincere appreciation of the hearty co-operation received from the President, members of the Board of Directors and of the various committees.

I also wish to take this opportunity to commend to the Society the splendid work done by the office force, and especially the service rendered by Miss Dollie Dillon, our able and efficient Assistant Secretary-Treasurer.

Miss Dillon is thoroughly conversant with the workings of the Society and feels keenly its interest as well as that of every individual member of the Society. I deeply appreciate the valuable service she has so willingly and untiringly rendered.

Respectfully submitted,
ELIZABETH BASS, M.D.,
Secretary.

REPORT OF RESOURCES

On Hand January 1st, 1922.

Liberty Bonds (par value)		$ 33,250.00
On hand January 1, 1921	$ 30,600.00	
Purchased during 1921	2,650.00	
Domicile Fund, Savings Account		23.26
Medical Relief Fund, Savings Account		91.39
Petty Cash Account, Balance 1/1/22		8.11
General Fund, Actual Book Balance 1/1/22		101.45
Library Fund, Actual Book Balance 1/1/22		469.35
Securities of General Fund—Two $500.00 Certificates of Deposit		1,000.00
Total Resources		$ 34,943.56

REPORT OF LIBRARY FUND

From Original Deposit, up to Date, January 1, 1922.

Original amount of deposit	$5,000.00
Amount voted for Library Fund, out of the General Fund, at joint meeting of Board of Directors, 1920 and 1921	1,000.00
Interest accrued, to date, on Certificates of Deposit for this fund	88.56
Total amount of fund	$6,088.56
Expenditures	$5,607.71
January 1, 1922—Bank Balance	$ 481.85
Check outstanding	12.50
Actual Book Balance, 1/1/22	$ 469.35

(*) September, 1920.

REPORT OF THE GENERAL FUND

January 1, 1921, to January 1, 1922.

Balance on hand, January 1, 1921		$2,215.87
Total receipts, including balance, January 1, 1921	$11,482.98	
Total expenditures	11,381.53	
Bank balance, 1/1/22	$ 101.45	

COMMITTEES FOR YEAR 1922.

Scientific Essays: Dr. Denegre Martin, Chairman; Drs. I. I. Lemann, E. D. Fenner, M. Gelpi, J. P. Wahl.

Auditing Committee: Dr. F. M. Johns, Chairman; Drs. E. L. Leckert, L. Fortier, J. H. Smith, Jr., C. N. Chavigny.

Condolence Committee: Dr. F. R. Gomila, Chairman; Drs. C. P. Holderith, G. F. Cocker, Geo. Upton, J. Signorelli.

Criminal Abortion Committee: Dr. N. F. Thiberge, Chairman; Drs. R. E. Stone, W. R. Metz, Walter Levy.

Employes' Compensation Committee: Dr. E. A. Ficklen, Chairman; Drs. J. E. Brierre, W. P. Bradburn, J. W. A. Smith, H. W. Kostmayer, A. Jacoby, E. J. Richard.

Hospital Abuse Committee: Dr. W. D. Phillips, Chairman; Drs. G. S. Dempsey, D. J. Murphy, M. T. Van Studdiford, H. E. Miller, J. E. Isaacson, Louis Levy, C. P. Brown, J. M. Bamber, A. C. King.

House Committee: Dr. J. O'Hara, Chairman; Drs. W. T. Patton, Geo. Hauser, T. R. Burt, W. H. Knolle.

Judiciary Committee: Dr. A. O. Hoefeld, Chairman; Drs. Robert Bernhard, F. J. Chalaron, W. A. Troescher, H. B. Gessner.

Library Committee: Dr. S. C. Jamison, Chairman; Drs. Wm. Seeman, H. Dupuy, C. C. Bass, R. Lyons.

Librarian's Report Committee: Dr. J. A. Danna, Chairman; Drs. A. S. Yenni, A. M. Caine, C. A. Babin, E. L. Leckert, W. W. Leake, T. I. Tedesco, J. B. Larose, M. S. Rosenthal, E. D. Friedrichs, T. F. Kirn, R. C. Lynch, A. Noha.

President's Report Committee: Dr. R. B. Heninger, Chairman; Drs. R. Matas, S. F. Mioton, M. J. Magruder, R. A. Davis, L. S. Charbonnet, J. T. DeGrange, A. S. Yenni.

Publication Committee: Dr. E. Bass, Chairman; Drs. R. B. Harrison, P. T. Talbot, C. Chassaignac.

Public Health Committee: Dr. M. W. Swords, Chairman; Drs. Wm. Seeman, J. M. Callan, P. T. Talbot, J. M. Batchelor, Henry Daspit, Edmund Moss, Jerome Landry.

Relief Committee: Dr. Geo. F. Roeling, Chairman; Drs. P. Bohne, R. E. Stone, G. H. Hauser, A. I. Weil, Emile Bloch, D. F. Waide, W. A. Gillaspie, L. Canepa, A. J. Babin.

Secretary's Report Committee: Dr. E. S. Hatch, Chairman; Drs. F. Chetta, H. R. Unsworth, C. J. Miller, J. T. Crebbin, J. F. Ader, J. S. Rosenthal, D. Palmisano.

State Medicine and Legislation: Dr. B. A. Ledbetter, Chairman; Drs. John Callan, M. Souchon, J. A. Henderson, C. V. Unsworth.

Treasurer's Report Committee: Dr. J. J. Wymer, Chairman; Drs. A. Caire, Jr., E. F. Bacon, L. L. Cazanavette.

NEWS AND COMMENT.

New Officers State Society. At the forty-third annual meeting of the Louisiana State Medical Society held in Alexandria, April 11-14, the following officers were elected for the year 1922: President, Dr. P. J. Gelpi, New Orleans; 1st vice-president, Dr. G. M. G. Stafford, Alexandria; 2nd vice-president, Dr. Chas. Unsworth, New Orleans; 3rd vice-president, Dr. C. P. Gray, Monroe; secretary-treasurer, Dr. P. T. Talbot, New Orleans, re-elected for two years; Chairman House of Delegates, Dr. L. J. Menville, New Orleans; Councillors, Drs. S. M. Blackshear, New Orleans, first district; G. S. Bel, New Orleans, second district; F. T. Gouaux, Lockport, third district; A. A. Herold, Shreveport, fourth district; T. E. Wright, Monroe, fifth district; L. J. Williams, Baton Rouge, sixth district; E. M. Ellis, Crowley, seventh district; S. J. Couvillon, Moreauville, eighth district. Dr. E. L. Leckert of New Orleans, was recommended to the governor as a member of the board of medical examiners.

Association of Parish Medical Society Secretaries. During the meeting of the Louisiana State Medical Society, a meeting of the various Parish Secretaries was held and an Association of Parish Medical Society Secretaries organized. The following officers were elected to serve the first year: President, Dr. B. K. Parish, Mansfield; secretary, Dr. Elizabeth Bass, New Orleans. It was agreed that meetings be held annually, in conjunction with the annual meeting of the State Medical Society.

A Meeting of the La. State Railway Surgeons was held in conjunction with the annual meeting of the State Medical Society. Dr. J. J. Robert, of Baton Rouge, re-elected president, was given power of appointing two delegates to next meeting of the American Railway Association. On account of the war no meetings of the Louisiana Railway Surgeons had been held recently.

Post-Graduate Course for Negro Nurses. Twelve graduate negro nurses have been enrolled in the Public Health Post-graduate School of Nursing for negro registered nurses which was organized April 1, at the Flint Goodrich Hospital, New

Orleans. The course is being given under the auspices of the city and state health authorities and health agencies. The faculty of lecturers consists of Drs. Oscar Dowling, John Callan, George Dempsey, Maud Loeber, A. L. Whitmire, A. Williams, F. T. Jones and Haidee Weeks Guthrie, D. D. S.

PARISH BOARD OF HEALTH. The recently organized Board of Health of St. Bernard Parish has elected Dr. J. A. Estopinal as president and parish health officer, and Mr. Alcide Guiterres, secretary.

ST. LOUIS MEETING AMERICAN MEDICAL ASSOCIATION. The local entertainment committees of the A. M. A. have been busy preparing to show visitors true St. Louis hospitality and to provide for them such diversions as will be both restful and entertaining, and announce the following program: On Monday, May 2, Annual Golfers' Tournament; Tuesday, Opening Meeting in the Odeon with music and addresses; Wednesday evening, Banquets, such as Alumni, Fraternal, Sectional, etc.; Thursday afternoon, special Tea, by the Medical Department of Washington University on the grounds of the institution. On Friday evening the chief feature of the entertainments, a special program for the entire association will be given in the unique open air Municipal Opera, which has a seating capacity of ten thousand. The Ladies Entertainment Committee, under the leadership of Mrs. Willard Bartlett, has arranged to take immediate charge of every lady visitor to the convention. A special visit to Missouri Botanical Gardens is being arranged and will be an important item. Among other features to be shown will be an old Italian Herb Garden. Dr. C. E. Burford is Chairman of the Entertainment Committee.

CUBAN SOCIETY OF GASTRO-ENTEROLOGY. On January 30, last, at Havana, Cuba, was founded the Cuban Society of Gastro-Enterology. The first regular meeting took place March 13, at which the following officers were elected: President, Dr. F. Grande Rossi; vice-president, Dr. F. Torralbas; secretary, Dr. F. Solano Ramos; vice-secretary, Dr. Pedro Barrillas. The object of the society is to promote the study of diseases of the digestive system.

MEDICAL FELLOWSHIPS. The National Research Council announces the establishment of Fellowships in Medicine created for the purpose of increasing thoroughly equipped qualified teachers in medicine both in clinical and laboratory subjects. The Rockefeller Foundation and the General Education Board have appropriated a total of $100,000 for a period of five years in support of the fellowships. Those receiving awards will be known as Fellows in Medicine of the National Research Council. To qualify, a candidate must have the degree of Doctor of Medicine or Doctor of Philosophy from an approved university, or preparation equivalent to that represented by one of these degrees. Only citizens of the United States or Canada will ordinarily be appointed, although the fellowship board is authorized to set this provision aside in exceptional cases. Correspondence concerning the fellowships should be addressed to the Division of Medical Sciences, National Research Council, Washington, D. C.

NATIONAL HOSPITAL DAY. The U. S. Public Health Service announces that due to the popularity last year of National Hospital Day, it has approved its repetition this year on Friday, May 12, the anniversary of the birth of Florence Nightingale, founder of the Red Cross. The public will again be invited to visit hospitals as guests and familiarize themselves with their atmosphere, methods and aims.

RED CROSS TO MOVE FROM GENEVA TO PARIS. In order to reduce expenses, the League of Red Cross Societies has decided to move its headquarters from Geneva to Paris. This step will reduce the expenses $15,000 a year. At the same time it was unanimously agreed to allow all nations to join, this move being made after the French delegate stated that France was no longer opposed to the admittance of Germany.

THE AMERICAN RELIEF ADMINISTRATION, through an order by President Harding, will have available for Russian relief medical, surgical and hospital supplies held by the War, Navy and Treasury and the Shipping Board. The supplies are to be delivered to the American Relief Administration within four months, and are not to exceed in original cost to the Government $4,000,000. The association is authorized to distribute the materials through its own agencies or other organizations operating in Russia which may be found better able to make proper distribution in centralized localities.

INTERNATIONAL OTOLOGICAL CONGRESS.—The tenth meeting of this congress will be held in Paris, July 19-22, next, and will be under the presidency of Professor Pierre Sebileau. Dr. A. Hautant, 28 Rue Marbeuf, Paris, is secretary general, and Dr. Thomas J. Harris, 104 East 40th St., New York City, is the secretary of the American Continuation Committee.

CHIROPRACTORS in Wisconsin cannot legally apply the abbreviation Dr. or D. C., to their names, according to a decision handed down by the assistant attorney general to the secretary of the board of medical examiners. It is held that a chiropractor, not being licensed to practice either medicine, surgery or osteopathy, is expressly prohibited from using the word ''doctor'' or the letters ''Dr.'' The letters ''D. C.,'' understood to stand for doctor ''practicing as a chiropractor,'' are in violation of the statutes.

THE ANNUAL MEETING of the American Association of Industrial Physicians and Surgeons will be held in St. Louis, May 22-23, during the meeting of the A. M. A. Dr. Clyde E. Ford is president.

NEW SCHOOL OF TROPICAL MEDICINE.—The foundation stone of the new School of Tropical Medicine at Calcutta, India, was laid by the Governor of Bengal on February 14. The Indian government donated $195,000 for the site and will contribute towards the support of the school. The chief work of the laboratory will consist in the investigation of the causes of tropical diseases and endeavor to discover more accurate facilities for diagnosis and improved method of treatment.

MOSQUITO CONTROL.—Co-operative anti-mosquito work in 45 towns situated in Southern States has cut down their malaria rate by 75 to 90 per cent, according to the U. S. Public Health Service. It has saved its cost several times (in one town eight times) in doctor's bills, medicine and lost wages, all of which items are positive and ascertainable.

AMERICAN LEGION OPENS DRIVE FOR CAMP. A campaign to raise $2,000,000 is being conducted by the American Legion, with headquarters in the Hotel Astor, New York City, for the establishment of a tuberculosis camp at Tupper Lake in the Adirondacks to take care of ex-soldiers. A site consisting of

1200 acres and twenty buildings has been acquired. Preparations are being made to take care of 1700 men during the first year. Dr. Samuel Lloyd is treasurer of the campaign committee.

STRAIN OF WAR LEAVES MARK.—An informal report from the War Department of physical examination of regular army officers discloses evidence of physical deterioration in army officers due to the strain incident to the world war. A most prominent feature noted by surgeons making the annual examinations of all officers, was the large and persistent percentage of excessively high or abnormally low blood pressure cases.

THE SEALY AND SMITH FOUNDATION of the John Sealy Hospital, Galveston, Texas, has been granted a charter by the Secretary of State. The purpose of this newly-incorporated foundation is the enlarging, remodeling and equipping of the John Sealy Hospital and other hospital buildings connected with it.

WORK HAS BEEN STARTED on the new $1,000,000 hospital of the Sisters of St. Mary, Clayton Road and Belleview avenue, St. Louis. The new building will accommodate 200 patients and be seven stories high.

CAMPAIGN AGAINST CANCER.—According to the Lyons Medical, a large public conference was held at Lyons, France, by the Ligue Franco-Anglo Americaine contre le cancer. It appears that the death rate in Lyons from cancer was greater than elsewhere in the country, being 150 per hundred thousand inhabitants, against the general average of 92 elsewhere.

NEW MEDICAL SOCIETY ORGANIZED.—Physicians from 12 parishes met in Baton Rouge March 30 and organized the Sixth Congressional District Medical Society. The following officers were elected to serve the first year: Dr. J. W. Lea, East Feliciana, President; Drs. A. W. Martin, Ascension; W. L. Grace, Iberville; P. H. Jones, East Baton Rouge; E. M. Toler, East Feliciana; N. F. Bray, Livingston; R. McG. Carruth, Pointe Coupee; A. F. Newman, St. Helena; A. G. Maylie, St. Tammany; L. D. McGehee, Tangipahoa; L. W. Brock, St .Landry; M. L. Levert, West Baton Rouge, and J. M. Kilbourne, West

Feliciana, vice-presidents; Dr. B. O. LeBlanc, Iberville, secretary. It was decided to hold annual meetings in Baton Rouge.

THE ANNUAL MEETING OF THE BOARD OF DIRECTORS of the Eye, Ear, Nose and Throat Hospital was held on April 18. The following officers, all serving the previous year, were reelected: President, Mr. W. R. Stauffer; first vice-president, Mr. Walter H. Cook; second vice-president, Mr. Warren Kearney; treasurer, Mr. Marcus Walker; secretary, Mr. Joseph A. Hincks; assistant secretary, Mr. L. A. Wogan. Dr. Chas. Chassaignac was reappointed chairman of the House Committee and Mr. Alfred LeBlanc chairman of the Auditing Committee. During 1921 10,539 patients were admitted and 3,755 operations performed.

AMERICAN PROCTOLOGIC SOCIETY.—The twenty-third annual meeting of this association will be held in St. Louis, Missouri, May 22 and 23. Headquarters will be at the Hotel Claridge, and the profession is cordially invited to attend its public session.

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER elected the following officers for the year 1922: Dr. Charles A. Powers, president; Dr. George E. Armstrong, Dr. Clement Cleveland, Dr. Livingston Ferrand, Dr. Rudolph Matas, vice-presidents; Thomas M. Debevoise, secretary; Calvert Brewster, treasurer; Sir Arthur Newsholme, honorary vice-president. While the budget for 1921 called for $15,000, the Society actually raised and spent $28,000, the increase being largely due to demands consequent upon National Cancer Week. The increased demand for information and the desirability of assisting the field organization by creating a Field Department so impressed the representatives of the Society, that a budget of $60,000 for the year 1922 was voted.

VITAMINES AND PELLAGRA.—The U. S. Public Health Service reports that efforts during the year to discover the unidentified food substance whose absence from the diet causes pellagra, have excluded two of the three known vitamines. The search for the missing element is being steadily narrowed.

EACH DOLLAR BRINGS FIVE MORE.—The U. S. Public Health Service reports that the expenditure of $50,000 for rural hygiene work on the co-operative plan in the last fiscal year led to the appropriation of five times as much by states and counties.

Civil Service Examination.—The United States Civil Service Commission announces an open competitive examination for Junior Medical officer. Applicants should at once apply for Form 1312, stating the title of the examination desired. Forms may be had from the Civil Service Commission, Washington, D. C., or from customs officials in the various districts.

Personals.—Dr. J. T. O'Ferrall announces the opening of a department of physio-therapy (physical education and orthopedic massage), in connection with his office.

Dr. L. Rosa H. Gantt, of Spartanburg, S. C., attended the meeting of the Executive Committee of National Women's Medical Association held in New Orleans during April. Dr. Gantt was the guest of Dr. Elizabeth Bass during her visit.

Dr. Chas. H. Mayo, of Rochester, Minn., was a visitor in the city during April and gave talks to the Senior and Junior medical class of Tulane University.

Removals.—Dr. J. W. Darby, from Mer Rouge to Reynaud Building, Baton Rouge.

Dr. T. A. Maxwell from 1115 to 1210 Maison Blanche Building.

Dr. M. F. Meyer from 3435 Prytania street to 5th floor Medical Building.

Died.—On March 15, in Victoria, Texas, Dr. René R. Hopkins, formerly of New Orleans, aged 75 years.

On March 28, Dr. H. P. Brisbane, of Clarks, La., aged 63 years.

On April 10, Dr. G. M. Huckabay, of Shreveport, aged 48 years.

PUBLICATIONS RECEIVED.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Diseases of the Skin and the Eruptive Fevers, by Jay Frank Schamburg, A. B., M. D., fourth edition, revised.

Papers from the Mayo Foundation and the Medical School, University of Minnesota, I, 1915-1920.

Text-Book of Physiology, by Wm. H. Howell, Ph.D., M. D., Sc.D., LL.D., eighth edition, revised.

The Physiology of the Mind, by Francis X. Dercum, A. M., M. D., Ph. D.

Text-Book of General Bacteriology, by Edwin O. Jordan, Ph. D., seventh edition, revised.

Clinical Electrocardiography, by Frederick A. Willius, B. S., M. D., M. S.

Infant Feeding, by Clifford G. Grulee, A. M., M. D., LL. D., fourth edition, revised.

Psychoanalysis, by A. A. Brill, Ph. B., M. D., third edition, revised.

Neoplastic Diseases, by James Ewing, A. M., M. D., Sc. D., second edition, revised.

The American Illustrated Medical Dictionary, by W. A. Newman Dorland, A. M., M. D., F. A. C. S., eleventh edition, revised.

Medical Clinics of North America, January, 1922, Vol. 5, No. 4.

WILLIAM WOOD & COMPANY, New York.

An Introduction to Dermatology, by Norman Walker, LL. D., M. D., F. R. C. P., seventh edition.

Index of Treatment, by Various Writers, eighth edition, revised and enlarged.

Physiology of Gout, Rheumatism and Arthritis, by Percy Wilde, M. D.

THE MACMILLAN COMPANY, New York.

Protein Therapy and Nonspecific Resistance, by William F. Peterson, M. D.

Opiate Addiction, by Edward Huntington Williams, M. D.

THE REBMAN COMPANY, New York.

Abdominal Pain, by Prof. Dr. Norbert Ortner, translated by William A. Brams; M. D., and Dr. Alfred P. Luger.

PAUL B. HOEBER, New York.

The Mechanics of the Digestive Tract, by Walter C. Alvarez, M.D.

THE YEAR BOOK PUBLISHERS, Chicago.

The Practical Medicine Series: Vol. VI., **Pharmacology and Therapeutics,** edited by Bernard Fantus, M. S., M. D.; **Preventive Medicine,** edited by Wm. A. Evans, M. S., M. D., LL. D., D. P. H., with the collaboration of G. Koehler, M. D., under the general editorial charge of Charles L. Mix, A. M., M. D.; **Nervous and Mental Diseases,** by Peter Bassoe, M. D., Vol. 8; **Skin and Venereal Diseases,** by Oliver S. Ormsby, M. D., and James H. Mitchell, M. D., Vol. 7.

WASHINGTON GOV'T. PRINTING OFFICE, Washington, D. C.

United States Naval Medical Bulletin, Vol. XVI, Nos. 2 and 3.

Mortality Statistics, 1920.

Public Health Reports, Vol. 37, Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

MISCELLANEOUS.

Forty-fourth Annual Report of the Department of Health of the State of New Jersey, 1921., Méthode de Récuperation fonctionnelle, by Dr. Gabriel Bidou.

Eye-Sight Conservation Bulletin I, Eye-Sight Conservation Council.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans ,for March, 1922.

CAUSE.	White.	Colored.	Total
Typhoid Fever			
Intermittent Fever (Malarial Cachexia)	1	2	3
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough			
Diphtheria and Croup	2		2
Influenza	39	13	52
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	32	39	71
Cancer	24	18	42
Rheumatism and Gout		2	2
Diabetes	6	3	9
Alcoholism	4		4
Encephalitis and Meningitis	2		2
Locomotor Ataxia	3		3
Congestion, Hemorrhage, Softening of Brain	27	9	36
Paralysis	5		5
Convulsions of Infancy			
Other Diseases of Infancy	7	6	13
Tetanus	1	1	2
Other Nervous Diseases	8		8
Heart Diseases	59	31	90
Bronchitis	1	1	2
Pneumonia and Broncho-Pneumonia	61	42	103
Other Respiratory Diseases	1		1
Ulcer of Stomach	1		1
Other Diseases of Stomach		1	1
Diarrhea, Dysentery and Enteritis	7	7	14
Hernia, Intestinal Obstruction	2	1	3
Cirrhosis of Liver	1	6	7
Other Diseases of the Liver	2	1	3
Simple Peritonitis	1		1
Appendicitis	4		4
Bright's Disease	16	9	25
Other Genito-Urinary Diseases	10	9	19
Puerperal Diseases	8		8
Senile Debility	1		1
Suicide	2		2
Injuries	33	11	44
All Other Causes	40	17	57
Total	411	229	640

Still-born Children—White, 24; colored, 16; toal, 40.

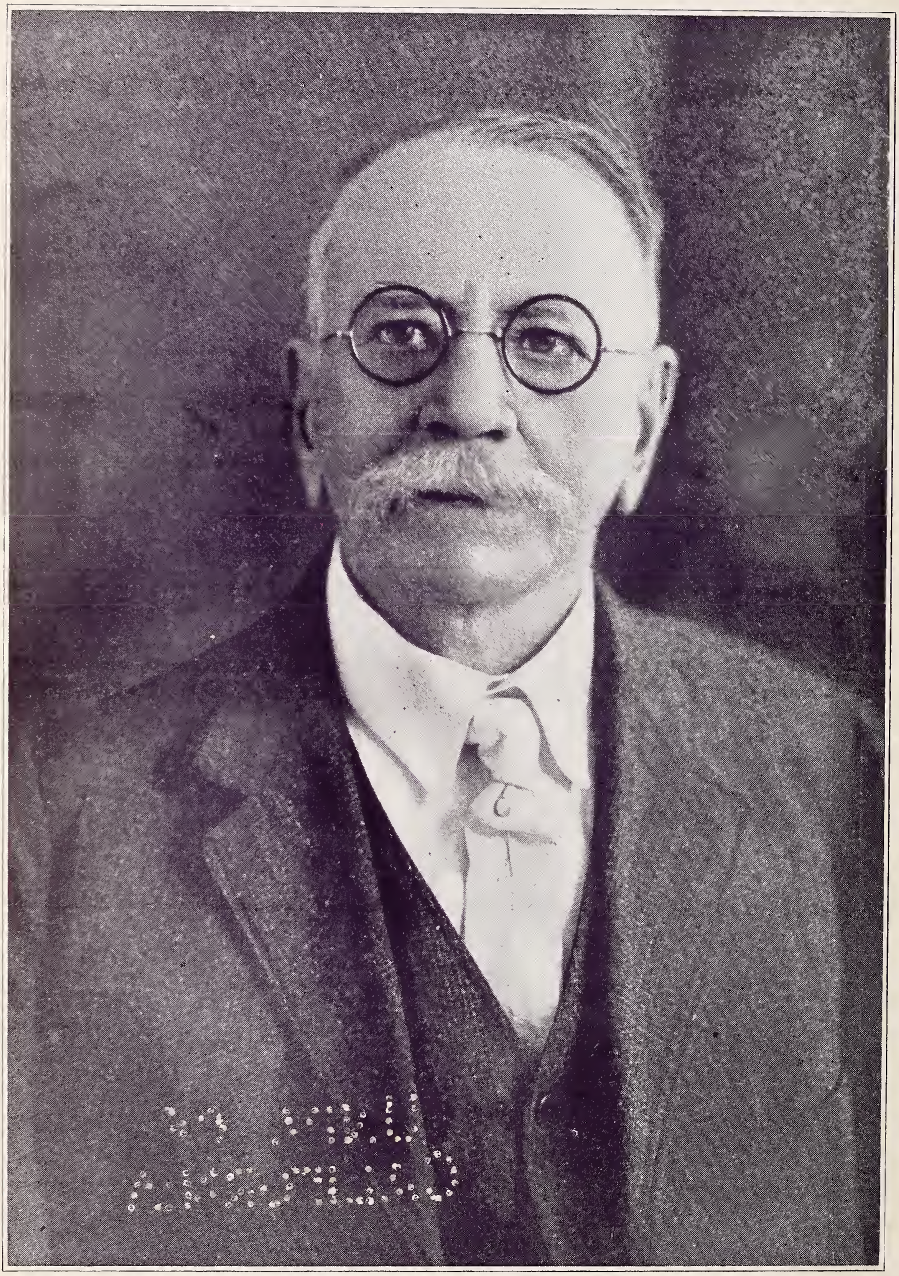
Population of City (estimated)—White, 295,000; colored, 110,000; total, 405,000.

Death Rate per 1000 per annum for Month—White, 16.72; colored, 24.98; total, 13.96. Non-residents excluded, 17.09.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.08
Mean temperature	62.
Total precipitation	8.45 inches

Prevailing direction of wind, southeast.



ERNEST SYDNEY LEWIS, M. D.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITOR: CHAS. CHASSAIGNAC, M. D.

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Vol. 74 JUNE, 1922. No. 12

EDITORIAL.

DR. ERNEST LEWIS.

"Peace hath her victories,
No less renowned than war."

Never a better illustration of this was there than when the meeting of the Orleans Parish Medical Society on April 24 was, through the happy thought of the Scientific Essays Committee, transformed into a veritable "Lewis night." Never did a conquering warrior receive warmer acclaim—and this not from the fickle mass, easily dazzled by the glitter of a passing success, nor from a composite audience, swayed perhaps by some dramatic or sensational event, but from a dignified body of professional men, co-workers, assistants, pupils, admirers all, come to pay a tribute of love and esteem to their aged confrère.

Aged, did we say? It takes the official records and the good doctor's own figures to convince us that he is really eighty-two years of age and has completed sixty years of medical practice. Erect of carriage, clear in complexion, elastic of step, resonant in voice, with good eyesight and hearing, he is the last man to whom we think should apply the term old. A few days ago Dr. Lewis called at the writer's home on business and was received by our aged sister who, on learning the name of the caller, said the Dr. Lewis she knew was "old" Dr. Lewis, whereupon he of whom we write straightened up a bit more and retorted, "I am old Dr. Lewis." Let him put it thus himself if he will, but our first recollection of him is of the time when he was called "young Dr. Lewis," and he will have to change very materially before we can think of him otherwise.

Short as it seemed on account of its interest, the paper read by him at the memorable meeting took some little time for its delivery, yet it was given throughout in clear and vibrant tones, modulated a time or two by a little emotion, but betraying no sign of fatigue even for a moment.

When Dr. Lewis stood to read his paper the audience rose spontaneously and burst into applause, which was so loud and so prolonged that, in a political convention, it would have spelled sure success for the recipient.

The paper itself needs no comment. Those who had the rare good fortune to hear it will surely enjoy going over it again, while all the others, although missing the charm of its pleasing delivery, will no doubt derive great satisfaction from the reading of it in this issue.

After the "Reminiscences," in lieu of the usual discussion, the audience enjoyed immensely the tributes presented in turn by Dr. Rudolph Matas and Dr. F. W. Parham, also published in this number, as well as the address of Dr. Denegre Martin when he made the presentation of the beautiful loving cup tendered by members of the Orleans Parish Medical Society.

Delightful musical interludes were afforded by Mr. Theodore Roehl, who pleased very much with a vocal solo, by Dr. Homer Dupuy, wizard of the piano, and Dr. D. J. Murphy with the violin.

After the presentation of the cup refreshments were served, and, though the hour was late after the close of the exercises, we feel satisfied that had any one had the strength and stamina to accompany him, Dr. Lewis would have been ready to start on one of his little jaunts to West End and return.

It was a memorable night, a magnificent tribute deserved by the honoré, worthy of the society. We hope to have the happiness of witnessing another such when our dear professor will have reached, to paraphrase, four score and ten.

VALEDICTORY.

In laying down the editorial pen and dropping the reins of management of the Journal, with emotions compounded of relief and of grief, the writer feels that he must do two things: first, render a sort of accounting of his stewardship; next, explain to some extent the reasons for desiring to be relieved of the responsibilities of his office. For the first he must be permitted, however, to make use of the traditional editorial pronoun as, in reality we were originally two to share the labor, the disappointments as well as the joys of editorship during nearly twenty-five of the twenty-six and a half years of the administration now closing. Consequently, we lovingly and unhesitatingly yield to our lamented co-editor a large share of whatever credit may be deserved or granted.

> ''Oh, for the touch of a vanish'd hand,
> And the sound of a voice that is still!''

Forming a stock company with a small number of friends, whose financial aid and literary assistance we wish here gratefully to acknowledge, we gave as much of our time and energy to the running of the Journal as other duties allowed. We worked incessantly to build up and improve our publication; we encouraged the writing of articles and the report of cases by the members of the profession in the city and state; we gave support to all measures tending towards scientific progress in medicine, improvement in medical institutions and an increase in the material welfare of the physicians; we upheld our medical societies and other official bodies. During the whole period, or for 310 consecutive months, the Journal was issued without interruption and strictly on time.

We can claim, without much dread of being accused of vanity, that our management was fairly successful, for we increased our subscription list, we elevated the standard of our advertising while obtaining increased rates for the same, we survived through floods, panics, wars and pestilence, we saw competitors rise and fall, and we hand to our successors an organization with a clean record, free from the suspicion of unfairness or hypocrisy, resting on a sound business foundation, retaining its self-respect and a considerable degree of independence.

Our labor was mostly one of love for the financial investment was relatively small and unable to produce important results, still, and we say it with much satisfaction, it was the rare exception when the annual balance-sheet did not justify a substantial dividend for our stockholders.

The writer now begs the reader to bear with him a bit longer while he explains briefly why he is giving up the editorial chair, for he is not a quitter and would not want to be taken for such. He has had to bear the load, mental and physical, for many months and is now alone. He hopes it may be considered that he has done his part and is in consequence justly entitled to be relieved of this portion of his task. He is not vain enough to think that he can continue to carry on by himself indefinitely, and especially that it can not be best nor even right for the JOURNAL to remain a one-man affair; it is, or at least should be, too big a proposition for that. Hence, the most important reason for the change, the perpetuation and the betterment of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL. New Orleans has possessed it as its medical organ since 1844, and there must not be a particle of risk of either the discontinuation or the deterioration of this publication. This city is steadily increasing in importance as a medical center and its medical mouthpiece must develop in proportion. For the accomplishment of this development new blood is needed, new sacrifices must be made, and uninterrupted succession in the administration must be provided for. All this is attained by means of the control of the JOURNAL by the State Medical Society and for that reason the writer, representing all those interested, has arranged to transfer this periodical as a running concern to that society.

Beginning with the July number, the first of the new volume, the JOURNAL will appear under the management and ownership of the Louisiana State Medical Society. May it direct the work successfully, progressively, continuously, so that, like the brook, the Journal may be able to say,

> "Men may come and men may go,
> But I go on forever."

And now, with a heart full of gratitude for the many who have aided and encouraged him in some way at some time, bearing no ill-will to any who may have sought to criticise unkindly or hurt unjustly, with charity to all, the writer says good-bye.

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

REMINISCENCES.*

By ERNEST S. LEWIS, M. D., Professor Emeritus School of Medicine, Tulane University.

In old age we lose our enthusiasm and the ambitions of life cease to occupy our minds. Having garnered the harvest of our gleaning, we live a sort of negative existence in the past. Occasional instances, it is true, are met with of unimpaired mental and physical vigor in advanced age, but like cases sparsely gemming the desert wastes of Africa they but intensify the desolating barrenness surrounding them. Lacking in initiative and retrogressing in mind and body, progress and the onward movement of the world prove disturbing elements to their fossilizing minds. With few exceptions they live in a rut, flaunt their experience of the past, deplore modern social changes and are well satisfied of their work, which Kipling tells us "is the perfectest hell of it." These are my conclusions, drawn from observation, reading and self-analysis. But old age has its compensations to the physician, if he can retire, in the immense relief from the anxieties, worries and responsibilities of a taxing and wearing profession and in the esteem and affection of his professional brethren and the public, if he has lived up to the high ideals of the profession, and given unselfish service to humanity. Therefore, with philosophical resignation and acceptation of the mental limitations of age, I invoke my muse in bringing to light memories long dormant in my subconscious mind which may interest you if only in contrasting the past with the present.

The self-element of my receptivity may appear more evident than is consonant with modesty or desired by me, but necessary to connect the links of the chain of incidents and events to be related in these reminiscences. As I settle to my task "old

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***Read before the Orleans Parish Medical Society, April 24, 1922.**

faces look upon me, old forms go trooping by'' in endless review.

Although 63 years have elapsed since my matriculation, the past recurs most vividly to mind. The University of Louisiana (now Tulane since 1884) was on Common, between Dryades and Baronne Streets, the Medical College occupying the center of the square. The Faculty was composed of Professors Hunt, dean; Warren Stone, James Jones, A. Cenas, G. Nott, T. G. Richardson, J. L. Riddell, with W. C. Nicholls and Stanford E. Chaillé as demonstrators of Anatomy. In 1860 Dr. Lawson was added to the Faculty and given the chair of clinical medicine, which he held for one year. They were all men of distinction, but Dr. Stone towered above his colleagues in stature and preeminence as Mt. Blanc over her sister peaks of the Alps. He had a heart of gold, was the South's great surgeon, and possessed rare common sense and judgment, especially in deciding when to and not operate, and in the after treatment. His name was a household word in the Southland of his adoption. I recall a remark he once made regarding the abuse of calomel, then considered a universal panacea, that if one were to dig in any of the old cemeteries a mine of quicksilver would be found. Dr. Richardson, who was made Professor of Anatomy in 1859, had left his family in Louisville, sending for them when he had secured a home. Coming down the river by boat, one of its boilers exploded, causing the death of 120 passengers, including his wife and three children. It was a terrible catastrophe, borne by him with Christian resignation.

Being very fond of Anatomy, I not unfrequently went to the dissecting rooms before the opening for the class and lighting the two gas jets above the table on which my subject lay, would proceed with my dissection. One night, having extended the arm and hooked the hand to the head of the table, I proceeded to dissect the axilla. Whilst intent upon my work I suddenly felt the pressure of a cold hand upon my head, a chill ran down my spine and a shuddering awe came over me. All the superstitions of ancestors way back in the ages focussed in my mind and, to my overwrought imagination, the sheets covering bodies in the darkened and distant part of the room seemed to be rising. The cause quickly apprehended as due to the detachment of the hook from the hand, which had fallen on my head, my emotion subsided and I continued the dissection but with a sense of discomfort until the porter came in to light up.

During the same year a tragic incident occurred in the Charity Hospital. Dr. John Foster, the House Surgeon, had succeeded Dr. Chopin, who filled that office from 1853 to 1858, succeeding Dr. Foster in turn. They were bitter political enemies and professional rivals. One of the internes by the name of Weams was fatally shot in a brawl at a Carnival ball by a law student and conveyed to the Charity Hospital, where he was seen by both Chopin and Foster, but at different hours. What one prescribed the other threw out of the window. One morning their visits clashed and a fight followed at the bedside of the dying student, which had no consequence as they were separated by mutual friends. A few days later, meeting in front of the hospital entrance and both being armed, they engaged in a gun battle in which Chopin was wounded in the neck and the external jugular vein severed. Dr. Chopin was the Professor of Surgery in the New Orleans School of Medicine, and during the Civil War was on General Beauregard's staff as Medical Director of his corps. He was a distinguished surgeon, prominent in social circles, and for many years was President of the Boston Club. When he was President of the State Board of Health, during the yellow fever epidemic of 1878, he was harshly criticized by the press, which was not an unusual experience with those holding that office. He was a firm believer in the germ theory of infectious diseases, not yet generally accepted by the profession, and still less so by the laity. In a Carnival parade he was caricatured by a lay figure on one of the floats holding a fishing pole and line hooked with a crawfish fishing for germs.

In 1860 I entered the Charity Hospital as an interne, and there met Joseph Holt, who was entering his second hospital year. The following summer of 1861 a battle was thought to be imminent in the vicinity of New Madrid, Mo., and Dr. Nichols, who had succeeded Dr. Foster as House Surgeon in 1860, organized a Hospital Corps, to which C. H. Tebault and myself were attached. We arrived at New Madrid and, no battle taking place, all of the party returned but myself, who took a train for Richmond, intending to enlist in the Crescent Blues, commanded by my friend, Captain Mack G. Goodwyn. In Richmond I met Dr. Stone, who urged my return home to complete my medical studies, saying that in a medical capacity I would be more useful to the Southern cause. I followed his advice, resuming my position as interne. Before the annual meeting of the Board, February, 1862, Dr. Sprague, the Assistant House Surgeon, resigned, and at the suggestion of Dr. Nichols, I petitioned the Faculty for a premature examination, to apply for the vacant hospital position, which was granted, and passed. At the meeting of the Board I was elected. A few months later, Dr. Nichols resigning, I was appointed Acting House Surgeon with an increase in salary. The full title was not given me, I was informed by the President, Judge J. N. Lea, because of my youth. I was not then 22. On the surrender of the city to the Federal fleet and the arrival of General Butler to take possession, his Medical Director called at the hospital and requested me to assign a part of the institution for his sick and wounded. I flatly refused, telling him the institution was for the poor of the State only, but the Federals being in power, he could take possession if he chose and the Hospital Staff would withdraw. He replied he would not have us do that and left. He afterwards converted the St. Louis Hotel into a Military Hospital. I have regretted to this day my discourtesy at that interview, but there existed much bitterness of feeling in those historic days and I was but a callow youth in authority with but little experience. To give you a better understanding of the psychology of the Southern mind relative to the North the two following instances will illustrate it: Dr. Stone was arrested and brought before General Butler, charged with refusing to consult with the federal surgeons. Whether true or not, he did afterwards consult with them regarding an eruption attended with itching affecting the federal soldiers. After the consultation he was asked regarding the nature of the disease. His reply was "the mange, a disease of dogs." The other instance refers to a Jesuit priest, arrested on the charge of refusing to perform the burial service for the federal dead. When brought before the General and asked whether this was true, he replied, "Far from it, General, I would gladly bury you and your whole army." Before the federal occupation of the city the old Marine Hospital, on Tulane Avenue, where now is the House of Detention, was used as a Confederate hospital, with Major C. Beard in charge. Cut off from his sources of supplies, it had to be closed. He wrote me to that effect and of his dilemma regarding his sick and wounded, requesting that they be received at the Charity Hospital. My consent being given, they were transferred there. This coming to the knowledge of General Butler, led to the arrest of the members of the Board and myself. When brought to his presence at the Custom House, looking at me sternly he said, "How comes it, sir, that you, a physician, have discriminated between my sick and those of the Confederacy?" I answered, "they were not received as soldiers, but as charity patients," and handed him Dr. Beard's letter, which he read and, looking up, said, "I see you have an excuse, but having established a precedent, you will have to receive my men." Making a virtue of necessity and not aspiring to martyrdom by imprisonment at Ft. St. Philip or Ship Island, I answered, "Very well, sir, but furnish me with medical men to attend them, as we are very short-handed." He then authorized me to employ two physicians at a salary of $50.00 a month each, which he would pay them. I appointed my friends, Dr. Robert Davis, the uncle of Dr. Davis of our city, and Dr. Cleary to that duty. Some time later he issued his famous order compelling everyone to take the oath of allegiance or register as enemies of the United States Government. The entire Hospital Staff registered as enemies excepting J. A. Root, an interne, who took the oath of allegiance and became Assistant House Surgeon in 1871. When General Banks superseded General Butler, he appointed a Republican Board, and at the annual meeting in February, 1863, Dr. Smythe was elected House Surgeon. I was offered the Assistant House Surgeonship with an increase of salary, but declined. The next day I sought to obtain a pass to leave the city, but was refused. Through Dr. Warren Stone I was put in touch with two men about to run the blockade. Their names were O'Brien, an engineer, and Smith. For $100.00 they agreed to take me. When the time was propitious they designated the day, hour and place of meeting on Bayou St. John. Dr. Davis drove me there in my uncle's buggy; a skiff concealed in the weeds and containing two men emerged from the opposite side from where I was waiting. Entering, we re-crossed, pulling the skiff out of the water into the swamp. We worked all night and lay concealed or sleeping during the day to avoid detection, resuming our labor at night. About the middle of the third night we reached the Lake, about midway between Spanish Fort and West End. We rowed with muffled oars for some distance to avoid attracting the attention of federal patrolling boats, and then hoisting a light sail, steered for the mouth of the Tchefuncta and up the river to Madisonville. My companions refused to accept any pay, saying I had worked as hard as they. From this point I went by train to Tullahoma, where General Bragg's army was encamped, and there awaited the permit to my application forwarded to the Surgeon General to appear before the Examining Board. Receiving the permit, I reported to the Board in Charleston as ordered. The examination passed, I returned to Tullahoma, and after a short delay received my commission as Surgeon. Reporting to Dr. Fluellen, the Medical Director, was assigned by him to the Third Georgia Cavalry, Crews Brigade, Martin's Division. Some months later I became Chief Surgeon of the Brigade, and in the latter months of the war was on General Wheeler's Staff as Medical Director of the Corps. Our cavalry, mounted or dismounted, participated in all the battles in which the Army of Tennessee was engaged, and in daily cavalry fights when raiding in the rear of the enemy's lines. The hardships endured on these raids prompts me to give my whole-hearted endorsement to the refrain of a cavalry song: *''If you want to see hell, jine the cavalry.''* Upon my return to New Orleans at the close of the war, C. H. Tebault and myself, as volunteers, assisted Dr. Chaillé in the dissecting room. I also did some prosecting for Dr. Richardson, which repaid me in anatomical knowledge if not in money. Before the opening of the session in 1866 and 1867, Dr. Hunt asked me to be his Chief of Clinic and assistant, in preparing material for his pathological lectures, for which he paid me $500.00. He was a man of aristocratic carriage with Chesterfieldian manners. He was of a talented family, a born orator, and physiology furnished him scope for oratorical flights hard to follow by the student body, but poorly equipped mentally, as was the case after the war. In pathology he did better, as diseased lungs, livers and ulcerated bowels did not furnish inspiration to flights of fancy. It was related of him that when his brother, Randall, a distinguished jurist and statesman, was a candidate for some position, the United States Senate, I believe, he was scurrilously attacked in the public press by a political enemy named Frost, which, according to the existing code, could only be settled on the field of honor. In this he was anticipated by his brother, Dr. Hunt, who challenged the traducer of the Hunt family and in the duel which ensued, killed him. Dr. Hunt was stricken with apoplexy about the middle of the course and lingered until March, 1867, when he died. In view of his hopeless condition, I asked and obtained the consent of Dr. Richardson, the Acting Dean, to fill his hours on physiology during the remaining half of the term. This proved the golden opportunity that came to my door and led to my obtaining a professorship later. By the death of Dr. Hunt, Dr. Chaillé became Professor of Physiology and Pathology, and Dr. C. J. Bickham, who had been Assistant House Surgeon in 1859, demonstrator of anatomy. The year previous, 1866, several changes had taken place in the Faculty. Dr. Mallet had succeeded Riddell in chemistry; Dr. James Jones had vacated his chair, taken that of obstetrics on the resignation of Dr. Cenas, and was succeeded in the chair of the practice of medicine by Dr. S. M. Bemiss.

In 1867 I was Health Officer of the State Board of Health in the Third District. Before the outbreak of yellow fever a great many cases of Asiatic cholera occurred in different parts of the city, but disappeared when the fever assumed an epidemic form. One of my duties, assisted by two men, was to disinfect premises and areas infected, by spraying the floors and walls with a strong solution of carbolic acid, and drains, gutters and closets with the crude acid, so liberally used as to create a stinking and nauseating atmosphere, which in crowded tenement houses could not fail to aggravate the graver symptoms of the disease, which, combined with the irrational methods of treatment then in vogue, as drugs which irritated the stomach nearly always irritable in this disease, smothering the sick under blankets in July and August with closed windows, and denying them water when craving for it with the torturing thirst of Tantalus, must have contributed in causing many deaths. Our present knowledge of the cause of yellow fever leads us to regard the sanitary measures then used as about as effective and sensible as the beating on metal pans and the blowing of horns by our pagan ancestors to drive away the evil spirits to whose malign influence plagues were attributed. I never think of those past epidemics without recalling to mind the following lines from Goethe's Faust relative to a plague which had decimated the population of his native city during which, as a boy, he distributed to those afflicted a mixture which his father, a physician, concocted, the effects of which Faust, in his old age and acquired wisdom, relates to his friend, Wagner:

> "This was the medicine, the patient died,
> And no one thought of asking who recovered,
> Amongst these hills our hell broth wrought
> More havoc, brought more victims to the grave
> By many than the pestilence had brought.
> To thousands I myself the poison gave,
> They pined and died, I live to hear
> Their reckless murderer's praises far and near."

With the close of the session, my connection with the college and hospital ceased. In 1869 Dr. Joseph Jones succeeded Dr. Mallett to the chair of chemistry and clinical medicine, and Dr. F. Hawthorne succeeded Dr. G. Nott, who died, as professor of materia medica and therapeutics. In 1873 Dr. Stone died also and was succeeded by Dr. Richardson, who took the chair of surgery, and Dr. S. Logan that of anatomy. In the summer of 1874 I received a communication from the Dean, apprising me of my appointment to the chair of materia medica, therapeutics and clinical medicine, to succeed Dr. Hawthorne, who became professor of obstetrics and gynecology on the death of Dr. James Jones that year. I shall never forget my first clinical lecture. Thinking to make a good impression, I had memorized Trousseau's clinical lecture on Chronic Diarrhea, but memory failed me, and I retired crest-fallen and in an unenviable frame of mind. Evidently I did better later, for when Dr. Hawthorne died in 1875, the chair of obstetrics and gynecology was given to me. Dr. Hawthorne was admitted to be the best and most popular teacher in the Faculty; he was a man of fine character, with a charming personality; he was a surgeon in the Confederate army, and after the fall of the Confederacy, worked his passage to London on a vessel. In London, falling sick and being without funds, he was taken to a public hospital and the physician in charge, recognizing him to be a gentleman of culture and learning he was a physician, took him to his home, where he was most hospitably and tenderly cared for by the doctor and his wife, and on his recovery was supplied with funds to pay his passage back to the States. The kindness shown him was never forgotten, for after the death of this noble Englishman, who left his family destitute, he contributed liberally towards their support to the hour of his death. The nature of his disease was discovered through accident. To show a friend whose urine upon examination contained albumen, the negative effect of the test when applied to normal urine, he voided some, which upon testing, contained a much larger percentage.

Dr. Hawthorne, realizing that as his disease progressed he would soon have to give up his hospital and college duties, suggested that I prepare to replace him. Following his advice, I ordered works on gynecology of which I knew little, and concentrated my mind upon them. Six months later he died and I was appointed to the chair. At that time and until 1904, when a training school was inaugurated, the nurses of the hospital, if we except the sisters, whose function was chiefly supervisory, although they did some nursing also, were drawn from the lower order of society and but few could read or write. The old amphitheatre, in which major operations were performed, was also used by the professor of pathology and post mortem examinations made there for demonstration of diseased organs to the medical class. At different times the surgical and obstetrical wards had to be closed on account of surgical and puerperal fever, the nature of which and the relation between them not known until enlightened by Pasteur and his followers. At those times hardly a woman confined escaped the fever, and the mortality was high. The use of the ampitheatre for pathological demonstrations was stopped by Dr. Miles, House Surgeon, about the year 1885 or 1886. My predecessors not being surgeons had made no effort to develop the surgery of the female genitals, neglected throughout the South impoverished by the war, and the public mind in a state of continued agitation during the horrors of the reconstruction period. In the North more progress had been made and the publications of the work of Sims, Thomas and Emmett at the Woman's Hospital drew the attention of the profession to the surgery of women. Foreseeing the possibilities of this new field, I resolved to leave nothing undone in making this branch an important part of my course. I opened clinics for the benefit of the students as well as for myself, whose knowledge of the subject was but little more than theoretical. These clinics in time grew in importance, supplying me with abundance of material for learning, teaching and operating, and were largely attended by the students. Surgical gynecology in Louisiana consisted in simple perineal operations, the removal of polypi, by means of the ecraseur and ligature, cauterizations of the cervix for erosions or cancerous ulcers, leeches to the uterus in inflammatory conditions, the draining of pelvic abscesses and pessaries for displacements. It is true two vaginal hysterectomies had been done by Dr. Dubourg, ex-surgeon of the Imperial Guard of Napoleon, many years before, and two ovariotomies, one of these successfully by Dr. Chopin, concerning which a column and a half was written in one of the daily papers, and the second, which proved fatal, by Dr. Carson, although Dr. Schuppert, who had been to Berlin and followed Volkmann, the Lister of Germany, supervised the preparation of the patient and everything required for the operation to be aseptically performed. In the North, Dunlap, Kimball, Atlee and Paislee had given an impulse to this operation, but it was chiefly due to the success of Spencer Wells of England that it became popularized. In the pre-antiseptic days the pedicle was drawn above the lower angle of the abdominal wound and clamped. At a much earlier period the fatalities of this operation were so great that it was termed by Piorry "*Une audace Américaine*" and by Scanzoni, "A surgical temerity." Pelvic inflammations were called cellulitis or pelvic peritonitis, and not until Lawson Tate, in the early eighties, ascribed these inflammations to tubal infections and removed the appendages, was the profession enlightened regarding so common an affection. Pelvic hematocele was ascribed to disorders of menstruation and its origin in extra-uterine pregnancy not known until many years later. Flexions and prolapse were treated with stem and vaginal pessaries, which led Albutt to exclaim "that the unfortunate uterus was either impaled on a stem or perched on a twig." The stem pessary, as well as the use of the sound, was soon discontinued, as many accidents resulted from their employment. Submucous fibroids were removed from the vagina by dilating the cervix with sponge tents when necessary, which often caused infection, incising the mucous membrane and capsule and with finger or spoon saw, making a partial enucleation and grasping the fibroid with strong-toothed forceps and making traction, it was removed piecemeal or by morcellation, as it was called, by means of knife or strong serrated scissors. I have removed tumors nearly as large as the adult head reaching above the umbilicus, and it was tedious and exhausting work. The removal of fibroids by abdominal section was regarded as the most formidable operation in surgery, and although performed by Péan in France, Koeberle in the Netherlands, who were the pioneers in hysterectomy, Bantock and Spencer Wells in England, and Schroeder and Martin in Germany, it did not gain ground in this country until many years later. The method of Péan and Koeberle consisted in fixation of the cervix constricted by an elastic ligature or serre-noeuds to the lower angle of the abdominal wound, and in cases in which the cervix could not be brought up, its removal through the vagina and the broad ligaments clamped; that of Schroeder the intra-abdominal method of which Martin was the greatest exponent after Schroeder's death, in which the constricted pedicle was dropped.

The mortality was excessively high and recoveries only after a tedious and protracted convalescence. The improved surgical technique of Baehr, published in the *American Journal of Obstetrics* of 1892 and almost practically the method now in use, so simplified the operation and minimized the risks after the introduction of asepsis that it is attended with no more danger than a simple ovariotomy. As soon as this fact became generally known, the early operators reaped a very rich harvest of fibroid operations, the majority of them were so large and heavy that some operators used pulleys attached to the ceiling with hooks to lift them out of the abdomen. I never used pulleys, but two assistants were not unfrequently required to lift the tumor up to apply ligatures and ablate the uterus. I mention these facts that you may realize the wonderful evolution of gynecic surgery since those early days, which I have had the good fortune to follow, step by step. The removal of a large ovarian tumor from a colored woman sent to the hospital by Dr. Myles, of Port Gibson, was my earliest abdominal operation in 1878. Listerism held sway at that time and antiseptic methods were rigidly followed. The day before, instruments, sutures, ligatures and sponges were sterilized by me at my home by boiling, then immersion in a strong carbolized solution, and in boiled water afterwards. Before going to the hospital I took a strong carbolized bath. The patient, who had been purged and given a bath and no food the day before, was prepared for the operation in the dressing room of Ward 36, by scrubbing her abdomen with soap and water, and then with a strong carbolized solution. My hands in the meantime had been thoroughly scrubbed and disinfected. The patient chloroformed, I proceeded with the operation, whilst a student with a portable steam atomizer sprayed the abdomen with a carbolized solution. The tumor, which weighed about 65 pounds, was removed and the wound closed with through and through silver sutures and the dressings applied. The sutures were not removed before the end of the second week. This patient made an uneventful recovery, but was not allowed to get out of bed before the third week. The hand spray was soon discontinued as the vapor blurred my glasses, which had to be frequently removed and wiped, nor was the antiseptic bath continued long except when in attendance on infectious cases. I got Ponder, the hospital engineer, to put a steam atomizer in the ampitheatre to flood it with a strong carbolized vapor for one hour before my time for operation.

Regarding puerperal fever, many fanciful theories prevailed. By Fordyce Barker it was regarded as a fever *sui generis* affecting lying-in women only. The discoveries of Pasteur and other bacteriologists soon exploded these fanciful views and led to the antiseptic management of labor. At one time antiseptic douches of carbolized or bichloride solution was quite in vogue in the beginning of labor and after its termination, but was discontinued as it was found to do more harm than good. Curetting was also practiced in septic endometritis, followed by carbolized or bichloride douches, and proved harmful also in breaking down the barriers provided by nature and opening up fresh avenues for infection as well as for the occasional toxic effects produced, and was soon abandoned. My chief operations at first were repairs of the cervix, to which there was no end, anterior and posterior colpoperineorrhaphies, vesico-vaginal fistulae and submucous fibroids removed through the vagina. In these plastic operations silver wire was used exclusively and it was as tedious to remove them as to introduce them. My first abdominal hysterectomy was for a fibro-cyst of very large size, mistaken for an ovarian tumor until the abdomen was opened. The trocar thrust into it was followed by the flow of only a little fluid and the incision had to be extended to the ensiform cartilage to eviscerate it. The tumor was so large and heavy, two of my aids were needed to hold it up in order to encircle the cervix and broad ligaments with a clamp which was tightened by means of screws and a supravaginal amputation practiced. The stump was seared with the actual cautery and through and through silver wire sutures used to close the walls and heavy dressings applied. Every two or three days the screws were tightened and in about fifteen to twenty days the clamp came away and was removed. The stump retracted, leaving a cavity large enough to contain an egg. She made a perfect recovery and lived for many years later. It was fortunate my early cases were successful, for the students returning home circulated the news, and patients with ovarian tumors began to flock to the hospital, which when removed weighed from fifty to one hundred and ten pounds, the largest removed by me. This woman measured six feet around the waist and five feet and a half from the ensiform cartilage to the pubis. There were, however, much larger tumors removed, as the one related to me by Dr. Cartlege of Louisville, Ky., which he removed. It weighed two hundred and forty-five pounds. This woman had sat in a chair for twelve months, for she could not lie down. This tumor he preserved and showed at a meeting of the American Medical Association and a large dry goods box was required to contain it.

Of course, I had my series of fatal cases. Many of these large tumors were found on opening the abdomen to be extensively adherent and the women besides in such a state of exhaustion that some died of shock, secondary hemorrhage or other sequelae. The only men I recall doing pioneer work in the South besides myself were Maury, of Memphis, Tenn., and Batty, of Rome, Ga. By this time the Carpet Bag government was overthrown and Francis T. Nicholls elected Governor in 1876. Among his early acts was the appointment of a new board of Administrators, who elected Dr. Pratt House Surgeon and Dr.

Miles, assistant. Dr. Smythe, whom Pratt succeeded, was House Surgeon since 1863, and his assistants during his term of office were A. J. Foret, J. K. Root and G. W. Lewis. He was a skilled operator, had original ideas and was the first on record to cure an aneurism of the right subclavian artery by first ligating the right innominate and carotid arteries and, on the supervention of hemorrhage, thirteen days later, the vertebral. He was, I believe, the first also to perform a fixation for a floating kidney on a woman suffering from serious nervous troubles ascribed to it, by transfixing the abdominal walls and kidney posteriorly with a long needle armed with a ligature which, when tied, secured it in place. Dr. Pratt resigned because of ill health at the end of a year, and was succeeded by Dr. DeRoaldes, who in his second year of office, with Dr. Holliday, Chairman of the Board, sought to inaugurate a training school for nurses, which met with so much opposition from the Sisters, who may have thought it a movement inimical to their interests, that pressure was brought to bear upon the Governor through their friends, and the resignation of the members of the Board favoring it and of Dr. DeRoaldes was asked and a new Board was appointed, who elected Dr. Miles House Surgeon and Dr. David Jamison assistant, who resigning at the end of a year, was replaced by Dr. Parham, who whilst in this position noted the prevalence of puerperal fever from which the obstetrical wards were hardly ever free, and when in 1887, according to a paper of Dr. Lee, of Galveston, nearly one-half of the puerpurae of that year suffered from septic fever, he inaugurated strict antiseptic measures in the obstetrical wards, with the astonishing result that in the same length of time, but one case of fever occurred and no deaths. He also instituted asepsis in his surgical service, for which a small sterilizer was purchased. It is true this had been practiced before by Dr. Schuppert in the ovariotomy mentioned, but not continued, and by Dr. LaPlace in his service, but also discontinued when he was called to Philadelphia, until revived by Dr. Parham, from which time it gained ground until it became the universal practice, when sterilizers were installed in the new ampitheatre.

In 1884 Dr. Bemiss died. He was a physician of distinction, who had made many valuable contributions to medical literature. He was also a good teacher and was a member of the National Board of Health. His successor was Dr. John B. Elliott, Sr., whose Chair of materia medica was given to Dr. J. Y. Payne, of Galveston, who occupied it but a year, then resigned and was succeeded by Dr. A. B. Miles. In 1888 Dr. Bloom replaced Dr. Parham at the hospital and the following year Dr. Richardson died. He was a man of high moral character, but of strong prejudices, an excellent teacher, a skillful operator and dean since 1867, and had been President of the American Medical Association. Several years after the loss of his family he married Miss Slocumb, who after his death donated the funds for the erection of the Richardson Memorial. In an operation of a dangerous character on an old gentleman with sarcoma at the root of the neck (assisted by Dr. Souchon and Dr. Chopin, the consulting surgeon), which he removed successfully, Dr. Chopin introducing his fingers in the depths of the wound, pulled up a piece of membrane deeply attached and insisted that it be cut away, which was done by Dr. Richardson against his better judgment and was followed by the outpouring of such a torrent of blood that death ensued almost immediately, proving a great shock to every one present. The bill presented was thought by Dr. Souchon, who was on very friendly terms with Dr. Richardson, to be rather high, considering the unfortunate result, but he replied, ''Not at all. Consider my feelings.''

On another occasion he was called to a case, in a prominent family, diagnosed a polypsus by a homeopathic physician which proved to be a miscarriage attended with so profuse a flooding that upon his arrival with Dr. Souchon, who assisted him in his operations, he found her exsanguinated and almost pulseless. Without delay he prepared his aveling for transfusion and rolling up his sleeve told Souchon to transfuse from his arm to hers, illustrating in this humanitarian act a trait not exceptional of the self-sacrificing spirit of members of the profession when the occasion arises.

Dr. Logan succeeded Dr. Richardson as professor of surgery, and Dr. Souchon, demonstrator of anatomy from 1872 to 1876, became professor of anatomy. In 1893 the Southern Surgical and Gynecological Association met in New Orleans for the first time. Three of the visiting members invited to operate were handed a list of about 25 cases from my service, and expressed their surprise at the abundance of our material. Kelley selected a fibroid, Price and McMurtry pus tubes. These were the first gynecological operations outside of my own witnessed by me, although there were none I had not performed many times over. One of my operations a short time before the meeting was the removal of a floating spleen, mistaken for an ovarian fibroid. It was oblong and rounded, had descended in the pelvis and could be felt through the vagina. Two more large floating spleens were removed by me a few years later, which caused considerable nervous disturbance and discomfort, and at the time was a record in splenectomies. All three of my cases recovered and lived for many years afterward.

A year later, Dr. Logan died from appoplexy. We were warm personal friends and his death was a shock to me. He was a distinguished physician and surgeon and highly esteemed. Besides his war record, he had been professor of surgery and dean of the New Orleans school of medicine, professor of anatomy, and later of surgery, in the University of Louisiana, and was vice-president of the Charity Hospital Board at the time of his death. The successor to the chair of surgery, Dr. A. B. Miles, filled the position for one year only, succumbing to typhoid fever. He had been demonstrator of anatomy from 1875 to 1878, professor of therapeutics and hygiene from 1887 to 1894, and one year as professor of surgery. He did not live to see the Miles Amphitheatre erected that he and the Board, headed by Gen. Vincent, had planned, and in which he took very deep interest. He was a skillful operator, a good teacher, and had a brilliant career before him.

During the sessions of 1893 and 1894 I became infected through an abrasion of one of my fingers in an operation which brought me near death's door and confined me for many months to the house, and from which I did not fully recover for two years. This accident, I believe, occurred about the middle of the session, and that the students should not suffer, Dr. Joseph Holt, who had lectured on obstetrics in the New Orleans School of Medicine, was requested to fill my hours, which he kindly consented to do till the end of the course, to the satisfaction of the class and the faculty. He was President of the State Board of Health from 1880 to 1888, and whilst in that position originated and inaugurated the system of disinfection and sterilization continued afterward at the Quarantine Station. What I suffered mentally during my illness sends a shudder through me when recalled to mind. I sought for relief and distraction from enforced idleness and mental suffering in Grecian philosophy which not only soothed and quieted my mind but from which I imbibed also a certain amount of stoicism which enabled me to meet much greater trials later with fortitude. Whilst confined to my bed after the death of Dr. Miles I received a letter from Dr. Chaille, which was brought by the janitor, requesting me to write him my choice for the vacant chair, which I did. At the meeting of the faculty Dr. Matas, who was demonstrator of anatomy from 1889 to 1894, was elected, who in the chair of surgery has soared to empyrean heights of surgical eminence. He was student of my ward in 1878 and chief of clinic in 1880 for a short time, and if so minded, might a tale unfold relative to those early operations more gruesome than was related by Faust to his friend Wagner. I was then chairman of the Hospital Board and occupied that position for 14 years, during the terms of office of Governors Foster, Heard, Blanchard and Sanders, when a change was made by Governor Hall. During my term of office the Miles Amphitheatre, the Milliken and the Delgado Memorials and the Nurses' Home were erected. The Training School for Nurses was organized in 1894, during the first year of my chairmanship, and Dr. Bloom, who succeeded Dr. Miles as house surgeon, and had as assistants Drs. Fortier and Parker, worked very hard to get the consent of the Sisters. When the subject was first broached to Sister Agnes she refused, for she sensed that trained nurses under the direction of untrained Sisters would prove embarrassing, and she would not consent to their undergoing training, until Dr. Bloom proposed to go to Emmettsburg and submit the matter to the governing body of the order, to which she agreed. Dr. Bloom went to Emmettsburg, and after interviewing members of the Council Board, consent was given, provided the Sisters were excused from obstetrical or gynecological nursing, which was agreed upon. An experienced nurse was then employed to act as superintendent and organize this school. The Sisters became pupil nurses, followed the classes and stood their examination for graduation at the end of the term, and are now graduated nurses.

Let me now revert to earlier days of gynecology which I have purposely deferred to write more of until now. The marine sponge I mentioned as used in the earlier operations, gave way to gauze, the use of which at first and the newness of abdominal work and the carelessness of operators, led to accidents such as forgetfulness of a sponge or instrument in the abdominal cavity which was not particularly conducive to the well-being of the patient. Many such cases were related in medical literature, and many more escaped notice, as dead women as well as dead men tell no tales. I plead guilty of a mishap of this kind in an operation on a lady from Mississippi which was discovered when several months later her physician wrote me he had removed a sponge from the rectum which had sloughed through. Fortunately this patient recovered. Such mistakes are today inexcusable, though no doubt occasionally happening. The silver sutures gave way to silk worm gut, and then to catgut, the use of which, at first, owing to imperfect sterilization and preparation, caused infection or were absorbed too quickly, necessitating resuturing of the abdominal walls. When vaginal hysterectomies were first practiced I used Pean's forceps on the broad ligaments and occasionally ligatures when favored by conditions. In inoperable cases I removed the cervix, then curetted, and with long-toothed forceps or tenaculum, and with knife or scissors clipped, or cut away so much of the musculature of the uterus as to leave but a shell of the organ, which I would then fill with pledgets of cotton soaked in a strong solution of chloride of zinc, and be on tenterhooks for several days lest its destructive effects would extend to or beyond the peritoneal coat. I have withdrawn after about fifteen days casts of the uterus containing these pledgets. These patients would obtain a new lease of life for a year or more, and occasionally a permanent cure was effected. Radium is now substituted for chemical caustics or the cautery, and accomplishes as much and more without pain or risk, and may, when greater experience is acquired in its application, take the place of operative procedures. My abdominal sections I have never counted, and were I to say several thousands, my veracity might be questioned or accepted *cum grano salis,* as I can furnish no evidence to substantiate my statement, not having preserved any record of my cases. Let me state, however, I had the field to myself covering five of the Southern States for fifteen years, and for ten more years did the greater part of the work, though the field was then being contested by men trained under me or from other schools. Only after my resignation from the college and withdrawal from ward service in the hospital in 1912, did my work diminish, partly owing to my age, I presume, and what it signifies, and also to a rumor that I had withdrawn from active work, which I never took pains to contradict, but I still work and occasionally operate. Life to me without activity would prove unendurable.

It has always been a pleasure to me to help young men, and whilst on final analysis success mainly depends upon the man himself, he can be assisted and given opportunity upon which to build. Many distinguished and prominent men in the profession were my chiefs of clinic and served under me for many years, and no one rejoiced more than I did when they succeeded. I love my profession as an artist his art, and the business side was a matter of secondary consideration. I often neglected to send out bills, of which I was seldom reminded. On one occasion, however, I sent one in excess of what was due me. It was the custom with most physicians in family practice to send out their bills annually. Among my clients was one whose wife had added to the family every year for five years. At the end of the sixth year my collector called and among the bills made out was one for this client, which was only for two or three medical visits, but upon my collector's remarking that I had omitted the usual obstetrical fee, I added it, telling him I must have forgotten to record it. The next day an irate client called at my office and exclaimed, ''Great God, doctor, don't you think five children in five years is enough, and here you charge me for a sixth she did not have.'' Looking at him and laughing, I said, ''I included the obstetrical fee because it was a grave error on her part, she ought to have had one.''

I have been honored by medical bodies beyond my deserving, having contributed but little to medical literature. At the first meeting I attended of the American Medical Association, some time in the eighties, I was made chairman of the obstetrical and gynecological section, and Dr. Battey, of Rome, Ga., secretary. I went to but a few meetings afterwards. On my first attendance at a meeting of the Southern Surgical and Gynecological Association, in 1895, I was made first vice-president, and the following year at the meeting in Washington, was made president, and a few years later honorary fellow. I am also an honorary fellow of the American College of Surgeons. I was surgeon-general of militia during Governor Wiltz' administration, surgeon-general of the Louisiana Division of the Confederate Veterans under General Behan, president of the Association of Surgeons of the Army and Navy of the Confederacy, and one of the founders of the International Congress of Obstetrics and Gynecology, the first meeting of which I attended in Geneva. In 1898, after the reorganization of the State Board of Health, Governor Foster came to my office and asked me to take the presidency of the State Board of Health, which I declined, thanking him for the honor. He then offered it to Dr. Souchon, who accepted it. I was also president of the Boston Club for ten years.

In 1866 I married the daughter of the Reverend A. D. McCoy, and from this union nine children were born, of whom five survive, three sons and two daughters. One of my sons, Hampden, is prominent in the medical, Walter in the legal profession, and Merriwether is in business.

In conclusion, I cannot close this narrative without giving expression to my deep sense of gratitude and obligation to those without whose aid a different story would be told. Left an orphan at the age of 12, with two younger sisters, we were taken by two maiden aunts, sisters of my father, by whom we were reared and treated with the utmost kindness, consideration and affection. The expense for my education until my graduation in medicine was defrayed by my Uncle Dr. J. H. Lewis, my father's twin brother; than whom no better man ever lived, and upon my return from the war penniless, was supported by him and aided in my start in practice. He was a father to me and so loved by me. Nor can I ever forget the friends I have mentioned through whose advice and assistance I have achieved success in my profession.

Dr. Matas: Mr. President, Ladies and Gentlemen—It is with no small effort that I rise to express the affection and appreciation in which we all hold Dr. Lewis and the pleasure that he has given us by his contribution to the evening's entertainment and instruction. His fascinating reminiscences have that quality given by personal experience which appeals to every medical man who loves his profession, as well as to everyone interested in the medical history of this community and of the South. But to me, and to a few others here present, who, as his students, hospital interns, or chiefs of clinic, were—more than forty-five years ago among the first to fall under his spell—the story of Dr. Lewis' professional life,—as we have seen and heard him tell it to-night,—has a special charm and still closer appeal. If I may be permitted a statement of my own experience, this evening's discourse has had the effect of throwing me into a contemplative and reflective mood which is far more conducive to silence than to loquacity; a placid state that is akin to the pleasant but passive reveries that one in his "gray days" is likely to indulge by the fireside on a winter's evening—a state of mind which it is difficult to transform into other more objective demonstrations of mental activity.

While listening to Dr. Lewis' narrative, I have felt like a traveler who is hearing the well-told story of a long and adventurous journey which is halted and pointed by many thrills and episodes in which he has participated, and which have influenced and shaped much of his own course in the journey of life. This drift of thought is almost unavoidable in one who, like myself, has had the privilege of traveling over the same road, if not treading the same trail, blazed by Dr. Lewis and paved largely through his efforts, a little more than forty years ago. In this narrative of his life work and experience, our honored guest has drawn on a large canvass an admirable outline of the history and progress of medicine in New Orleans as it has evolved in the course of the sixty years that he has been one of its leading exponents. In fact, as we of the older set, who have tried to follow in his agile footsteps fully realize, he has outlined a history which in so far as concerns his own special branches of surgical culture, are largely of his own making. Apart, therefore, from their personal and biographic interest these reminiscences are destined to remain as an asset of permanent value to the future historian of medicine in Louisiana and of the South.

In following Dr. Lewis in the story of his great Life Hike, I again realize how much easier, if not pleasanter, it would be to remain quietly seated to ruminate and degustate unobtrusively the many choice surgical experiences and adventures recalled by his reminiscent memoire. So many incidents and events have occurred in the forty-five years that I have known him that would serve to recall the characteristics that have made him famous; his uncompromising integrity, his plain, blunt spoken truthfuness; his coolness in action; his courage in the face of almost insurmountable obstacles! his physical endurance; his quickness of decision; his fine judgment governed by the clearest common sense which extricated him from the most difficult situations; his wonderful capacity to infuse confidence in his subordinates as well as in his patients, who never questioned the accuracy of his touch or the certainty of his diagnosis when once asserted.

Many interesting supplementary anecdotes could be told to confirm the qualities of head, hand and heart, which have illuminated the professional history of the honored guest of the evening and which are now rapidly becoming traditional in the student body.

But in listening to Dr. Lewis' address, I have been reminded that, with characteristic modesty, he has hurried with the greatest brevity over the list of honors which he has received in the course of his superb medical career. He has laid no claim for the merit of his work as one of the most generous and charitable medical practitioners in this community, or to the historic recognition that he is entitled to as a pioneer and founder of surgical gynecology and abdominal surgery in this section of the country. Nor does he stress the recognition which his services as a patriotic and altruistic citizen have won for him in the respect and admiration of his professional brethren and fellow-citizen.

Feeling confident that this would be a great *hiatus* in his otherwise most interesting narrative, I decided, upon learning that Dr. Lewis was to read tonight, that I would make bold to supplement his reminiscences by adding an appendix, even though without his knowledge or consent. The epilogue or supplement which I propose to submit, embodies the sentiments of the Faculty of the School of Medicine of Tulane University of Louisiana as expressed at the time of Professor Lewis' golden anniversary of his entrance into the medical profession, including thirty-five years of active professional duty at the Medical School, and exclusive of the last ten years of his emeritus professorship (with partial service), in all forty-five years of teaching in this school and community.

It seems to me that the sentiments expressed in an address and resolutions adopted by the faculty in May, 1912, through a specially appointed committee of which I had the honor to be chairman, and which have never been given publicity outside of the faculty archives, can now be brought to light with renewed emphasis on a joyous occasion such as this, when at the close of another decade of ever green vigor, clarity of vision, and unrivaled physical and mental energy—we all, his colleagues, fellow-alumni, comrades and friends—can unite in mutual congratulations: Felicitations to ourselves that we can count with so much reliance on the encouragement and stimulus of his presence, and on the prestige that his achievements and example have given this community and our common profession. Congratulations to him that he is ''carrying on'' strong on the way to the eighty-third link in the golden chain of his ''accumulated years,'' with a healthy prospect of adding one annual sparkling gem after another to an already precious store!

He may be well pleased that he, as one of the acknowledged mentors of the profession, is able to add another lesson to his numerous teachings, by demonstrating with the ''vim, sap, and rubber'' that he has displayed tonight—that age is not always measured by time or by the calendar. In fact, he is one of those of whom Dr. Johnson would say: ''Panting Time toileth after in vain.'' What is more, while always a teacher, he can repeat the famous exclamation of Michael Angelo, who in his ninetieth year could say with pride, ''*Ancora Imparo*''—I yet can learn! Who, knowing our ''young Dr. Lewis,'' can ever doubt that, when he attains his centenary, some one may say of him what was said of Sophocles in his hundredth year: ''*Dans ses Veines* *toujours un jeune sang bouillonne,*" or fail to recognize in him the qualities extolled by the poet, in the lines:

> "Eye hath not seen, tongue hath not told
> And ear hath not heard it sung,
> How buoyant and bold, though it seems to grow old,
> Is the heart, for ever young."

(After these introductory remarks Dr. Matas read the following hitherto unpublished address delivered at a meeting of the Faculty of the Medical School, on May 23, 1912, in commemoration of the fiftieth anniversary of Professor Lewis' graduation in medicine and of the thirty-ninth year of his service as a teacher in the Medical Department of Tulane University of Louisiana. Copies of this address and of the resolutions adopted by the Faculty at the same meeting were incorporated in the minutes of the Faculty, together with a record of the presentation to Professor Lewis by the late Dean Dyer, of a gold watch suitably inscribed, as a token of the appreciation of his colleagues and of their deep regret at his retirement from didactic teaching.

The coincident election of Dr. Lewis as Emeritus Professor of Obstetrics and Diseases of Women, is fully referred to in the resolutions. The proceedings of the Faculty on this occasion were never published and it is with pleasure that the Editor and the Officers of the Orleans Parish Medical Society avail themselves of the opportunity offered by the "Lewis Jubilee Night" to give them due publicity.)

Address of Dr. Matas at the Meeting of the Faculty of the School of Medicine on May 23, 1912.

Mr. Dean and Members of the Faculty, Professor Lewis:

Contrary to all precedent and past experience in the history of our faculty meetings, we again assemble at the close of an arduous evening session, to consider a new busines which is not announced in the Dean's program. But the crowded halls, the anxious face and the exultant yells of the successful candidates all remind us that the session of 1911-12 is about coming to an end, and that the grave and most solemn of our professorial duties has been discharged. This occasion serves to remind us that 50 years ago at the close of the session in the memorable year of 1861-2, there stood in the vanished halls of the old historic building that was the home of our predecessors, an impatient and handsome youth who with scarcely twenty-two summers to his credit, was waiting the verdict of the seven learned Doges who at that time presided over the destinies of this then young, but already famous, republic of medical letters. Possibly, with the assurance that no doubt characterized the hospital interne of 1862, as much as he now displays in the year of 1912, this particular interne, conscious of his brilliant record and of the affection in which he was held by his chiefs at the old Charity, did not tarry with his fellows to wait for the dictum of the Dean, of which he had already been assured. For, indeed, as prophesied by the Seers who had read the triumphal march of this juvenile Esculapius in the stars, the dignity of the doctorate degree in medicine, duly inscribed in parchment, was issued to the young aspirant by the faculty on the fated 5th day of March, 1862. Little did the learned professors dream then that only eleven years thence this young stripling was destined to fill a coveted chair vacated in 1876 by the untimely death of one of the most respected and best loved men who has ever sat in a professional chair in this faculty, Professor Frank Hawthorne. The wheels of Time had barely rolled over the space of two years when our young professor, then scarcely 34 years of age, found himself elected by the will of his colleagues to the highest pinnacle of his legitimate aspirations, and was proclaimed professor of obstetrics and of the diseases of women and children, a position which he has since so brilliantly adorned. You have thus divined in this brief reference to the remarkable and triumphal career of one of our members, that I have alluded to no other than Professor Ernest Sidney Lewis, better known to the people of this community as the "*young* Dr. Lewis,"—because he, among other advantages that he enjoys over the other members of the profession, possesses the secret of perennial youth—which he jealously guards as his own.

And is it not eminently fitting and proper that we should meet on this special occasion to honor and celebrate with him (or, in spite of him), the attainment of the golden anniversary of his espousal of the medical profession? Is it also not meet and proper that we should select this moment when we are gathered in watchful attendance at the lying-in chamber of our prolific alma mater, at the happy close of one of her annual parturient efforts, when she gives to the world her numerous and vigorous progeny? Is it not right that, leaving her safe and sound after the ordeal, we should hie us to the festive board and in the late hours of the night unite, as a happy family, to congratulate the accoucheur in chief on his success, to congratulate the greatest "birth-helper" of his generation—"*Geburts hilfe*"—

as the Germans so appropriately designate the obstetrician; he who has stood unfailingly and steadfastly at his post, year after year, decade after decade, to help us through in this annual crisis; what is more, to congratulate him, and ourselves as well, for leaving her sound, unrent, robust and more perfect for the next gestation?

Yes, Professor Lewis, you may be surprised, and your innate modesty may protest against our outspoken declaration to hold you here tonight, and, in spite of you, to tell you what we think of you. It is a long time since your colleagues have thought of your just due; how we feel that it is only right that a long and unblemished career of arduous and devoted service should receive at least the open recognition that it so eminently deserves, and that you who have contributed so much to exalt the merits of others, should also receive a proof of the esteem in which you are held. And yet, your modest self-effacement which shuns all public or noisy demonstrations has barred the way to our well-meant purpose. But the semi-centennial of your professional birth and the insistence with which you have urged your much-feared retirement from the exacting and exhausting duties of your chair, has given us no other choice but to tell you to-night what has been silently locked up until now in our hearts. We who are your debtors as well as your friends—and proud to be so numbered—as we stand about you tonight, wish to pay you collectively and in our individual ways, and according to our several relations, our heartfelt tributes.

As I look over this paper at my honored friend, my gratefully acknowledged master, I am reminded of a similar occasion when the profession of Chicago had decided to celebrate the achievements of one of their greatest leaders, that distinguished but blunt-spoken Dane—Christian Fenger. When one of his most brilliant and attached pupils, Dr. J. B. Murphy, guardedly informed him of the proposed action of his colleagues, the modest man vehemently protested, explaining: "Yes, that is alright for you to speak this way, Murphy, *but I am not dead yet!*" The response was: "Yes, you are very much alive, and, thank God for that, but is it fair that you should make us wait and let some of us die—waiting until an Almighty and inscrutable Providence shall determine the time when according to your terms we are to have our say? Is it necessary to all honors should be posthumous? Furthermore, you might not be as fortunate as Socrates in your biography. There is no medical Plato within our visual horizon. There is no certainty either that, like Dr. Johnson, you have your Boswell.'' And I would add in the more direct language of one of your most venerable compeers in gynecology, Dr. Henry O. Marcy, of Boston, ''I would much rather have a little 'taffy' while living instead of a great deal of 'epitaphy' when I am dead.'' And you must agree, in spite of all your protestations, that a flower here and there during life is far more fragrant to our nostrils than great pyramids of roses to a dead man in his coffin. The assurance of the love of our fellows, of their esteem, of their loyalty, of their respect, is surely far more stimulating and encouraging than the most eloquent panegyrics when we are gone—where all is silence.

Fellow members of the faculty, we have met tonight not merely for personal gratification, but with the splendid purpose of paying a tribute of friendship to one of our fellows who has honored us for nearly four decades with his inspiring presence and support; who has honored our common profession; who has been a great personal help to many of us; who by the prestige that his great and good name has given to this college—to all of us.

The friendship that we feel for you, dear friend and colleague, is one of the things that adorn and sweeten human life the most. Its delights have been pictured by the Roman orator in an immortal essay. It lives in the heathen legend of Damon and Pythias. It reappears in Holy Writ where David and Jonathan are linked together like one soul. ''It begins with our youth; it heartens and cheers our manhood, and in the autumn of our lives, it illuminates our later days as with the glow of the setting sun. Even after we are gone, the memory of our friendship is as the afterglow which perpetuates the glory of the departed day. It becomes the highest better than a crown. It is one of the few things of which even poverty cannot rob the poor.'' (W. W. Keen.)

Inspired by these thoughts, the faculty, your friends, have decreed that we should dedicate the last hour of this closing session to the reading of a congratulatory message on the attainment of your glorious golden anniversary, which, in conformity with the usage that you have helped to fashion, we propose to insert, if only in justification of ourselves, permanently on our records. In deference solely to your insurmountable modesty we have restrained our enthusiasm to the extent of limiting this manifestation to a purely family gathering where we may keep you longer to ourselves, though it would have suited us still better to have proclaimed to the world what you had done for us and how much we loved you for it.

RESOLUTIONS SUBMITTED TO THE FACULTY AT THE SPECIAL MEETING HELD THURSDAY NIGHT MAY 23, 1912.

At a meeting of the Faculty held May 3rd, it was resolved by unanimous vote (Professor Lewis alone being absent) that a special committee be appointed by the Dean to commemorate in suitable resolutions the golden anniversary of Professor Ernest Sidney Lewis as Doctor of Medicine and as a graduate of the Medical Department of the University of Louisiana. These resolutions were to attest the appreciation in which he is held by his colleagues, the teachers of this College, the majority of whom are his pupils and all of them his friends.

In compliance with these instructions, your committee has the honor and the privilege to submit the following:

Whereas, Professor Ernest S. Lewis, B. S., Tulane, was graduated M. D. in the University of Louisiana (now Tulane) on March 5, 1862, thus completing with the close of the present session of 1911-12 the fiftieth since the date of his graduation, and a half century of service in the medical profession, devoted untiringly and unstintingly to the alleviation of a suffering people of his native city, of his state, and of the tributary section of this Southern country. Of these fifty years fully thirty-nine have been continuously dedicated to teaching in this college, one year as Lecturer on Physiology (1886-7), two as Professor of Materia Medica and Therapeutics (1874-76), and thirty-six as Professor of Obstetrics, Gynecology and Diseases of Children (1876-1912), and in addition, other lesser official functions exercised in the earlier years immediately following his graduation; and,

Whereas, Professor Lewis has again renewed his request that he be relieved of the official duties of his Chair, a request which on previous occasions he has reconsidered and withdrawn solely at the urgent solicitation of his colleagues, who could not bear to part with his almost vital influence as a teacher in this University, at last yield to the justice of his demands and reluctantly consent to his release;

Resolved, That the Faculty of the Medical Department, in regretfully accepting Professor Lewis' resignation from the Chair of Obstetrics and Gynecology, unanimously recommends that the Board of Administrators of the University elect him Professor Emeritus in the same Chair; but that this resignation be qualified by the provision that the title of Emeritus shall only mean that Professor Lewis is to be relieved of all systematic routine teaching. The Faculty is not to be denied the inestimable value of his active participation in directing the affairs of this Faculty, when it may please him to do so, and he is to consider himself the same welcome and trusted counsellor at its Board, always a source of inspiration and encouragement to his colleagues and junior associates. It is also

Resolved, That a special clinical hour be set apart in the weekly schedule of the curriculum for Professor Lewis' purposes at the Ampitheatre of the hospital, where the Senior class may be privileged to witness his operations and profit by his teachings and example.

Resolved, That in his several and distinct professorial capacities, and especially in his favorite and chosen specialties—Obstetrics and Gynecology,—to which he has given the best energies of his life, Professor Lewis' ability as a teacher, his technical skill as a surgical operator, his wide culture, his vast and varied experience, have made him the foremost consultant of his generation, the recognized and undisputed leader, **facile princeps,** in the special fields of medical knowledge with which he has identified himself. As a teacher and pioneer in this community, in the development of the obstetric and gynecologic arts, his willingness and readiness to share the benefits of his knowledge and experience with his younger and less experienced colleagues, and to impart to them the secrets of his success,—has been the most powerful stimulus towards the creation of a local school of operators and specialists, who are a credit to their Alma Mater, and who, in diffusing his teachings, recognize him as their master and the inspirer of their best achievements.

But in addition to his professional eminence and above his superior technical skill, Professor Lewis has indelibly graven his name in the hearts of his people by the boundlessness of his charity and his prodigal generosity in dispensing the treasures of his knowledge in the hour of need, without a selfish thought of material reward.

Dr. Lewis' broad humanity, combined with his unpretentious simplicity and genuine modesty, are conspicuous among the endearing and distinguishing characteristics which he has most amply demonstrated in the course of the five decades of the professional life which he has just spanned. He has been the friend of the poor and in the bestowal of his professional and other charities, he has known no distinction of class or condition, but consecrated his services to all. "The palace of the prince and the hut of the peasant have been alike the scenes of his professional activities and the beneficiaries in the same unselfish manner of his skillful ministrations." Like the Doctor of the Bonnie Briar Bush, immortalized by Ian Maclaren, it may be said of him: "No night was too dark, no sun too hot, no blast too chill, and no waters too deep for him to go on his errand of mercy to alleviate the needy sufferer."

In public life, though never a politician, Professor Lewis has always found time to actively discharge the duties of citizenship and to participate in all the social movements that have affected the welfare and the prosperity of the community in which he resides. Sought for his social prominence, his popularity with all classes as well as for his ability and, still more, for his unswerving and absolute integrity, Dr. Lewis has discharged important public trusts involving great responsibilities which he has always filled with honor and dignity. Like his departed and honored friend, our late Dean, Dr., Chaillé, he shared with him the distinction of a patriotic, militant and humane service, in the battles of the lost cause. Since the retirement of our Emeritus Professors, Drs. J. B. Elliott, Sr., and L. F. Reynaud, Professor Lewis remains with us the only member of this Southern Faculty who may now claim the honor and the dignity of wearing the gray, as a Confederate veteran.

It is now a matter of history how, in 1862, Professor Lewis gave up the coveted position of House Surgeon of the Charity Hospital, to enlist as a Confederate Surgeon at Tallahoma, how he was rapidly promoted for his valor and efficiency to a brigade surgeonship, and medical directorship in Wheeler's famous cavalry corps, to which he was attached until the close of the war. It was then that he returned to his home in this city where he began his civilian career and obtained immediate recognition as one of the most successful practitioners in the metropolis, quickly ascending the ladder of Fame until he reached the high pinnacle where he stands today.

In recognition of these facts and in expression of the friendship and esteem in which we hold him, we, his colleagues and his associates of the Medical Faculty, hereby extend to Professor Lewis our heartfelt congratulations on the attainment of the golden anniversary of his wedding with the medical profession; a union which has known no discord, dissension or disloyalty; a union which has been characterized by a spotless purity and has been blessed with a bounteous fertility out of which have sprung Honor, Gratitude and Love. That he may continue to enjoy for many more years the fruition of his generous sowing and that in the contemplation of the rich harvest he may find the most fitting and joyful reward of his laborious tillage, is the fervent wish of his friends—The Medical Faculty.

R. MATAS, Chairman,
JOHN T. HALSEY
S. M. D. CLARK
} Committee.

(Citation of Professor Lewis by the President of the American College of Surgeons on the presentation of the Honorary Degree of the College, at the Convocation held in Philadelphia on October 27, 1916, Professor Lewis being the only recipient of this distinction that year.)

ERNEST SYDNEY LEWIS, B.Sc., M.D., of New Orleans, Louisiana; Emeritus Professor of Obstetrics and Gynecology in the Medical Faculty of Tulane University of Louisiana; sixty-five years a Doctor of Medicine; forty-five years a teacher in his Alma Mater, the Medical Department, Tulane University,—of which forty years have been largely devoted to the teaching and practice of obstetrical, gynecological and abdominal surgery.

A pioneer in the development of gynecology and abdominal surgery in America, and the father of these branches of medicine, as specialties of surgery, in the community of which, throughout his life, he has been an honored part.

A man of wide culture, of vast and varied experience, of great technical skill and judgment, of spotless character and integrity, and of whole-hearted devotion to his profession, he became, early in his career, an undisputed leader and the foremost consultant in his special field of practice, of his generation.

He is beloved by his people for his unswerving rectitude, his patriotic and courageous citizenship, his unpretentious simplicity, and unquestioning readiness to respond to any call and bestow the best of his life's energies upon the suffering, without distinction of class or condition.

Always a man of action, he has never been a chronicler of his own deeds; hence, his contributions to the literature of his profession count as a very small part of the large sum of his accomplishments. A record of his unpublished achievements would easily fill many portly tomes.

In conferring upon Dr. Ernest Sydney Lewis its highest distinction, the American College of Surgeons recognizes, in his life of public service, that type of surgeon who, through his skill and learning, has not only contributed materially to the advance and progress of his art, but who, living up to the highest traditions of medical conduct, has exalted the esteem and dignity of his calling in the minds and hearts of his fellow-men.

Dr. Parham: Mr. Chairman, Ladies and Gentlemen—At this time I am reminded of a conversation which took place between a Bishop and Uncle Mose. They were discussing Dr. Osler's proposition, jocularly made, that at a certain time in a man's life he should be chloroformed or otherwise retired. The Bishop asked Uncle Mose what was his opinion. "Well, Bishop," he answered, "my idea is about this, that a man goes up for a while, then he goes along the level for some time, then he begins to go down." "Well," asked the Bishop, "when, in your opinion, does he begin to go down?" Uncle Mose replied: "That 'pends upon the speed with which he went up."

It is certainly a great pleasure for all of us to listen to a man who has been practicing medicine for two generations. I am reminded of some remarks that were made on the 99th birthday of Dr. Stephen Smith, who, in 1871, organized the American Public Health Association. Dr. Smith, who is still alive, was 99 years of age last February. In a bibliographical sketch of him it was stated that he could still march through the streets in full vigor, not even wearing eye glasses. I beg to quote some remarks made about him, substituting for his name that of Dr. E. S. Lewis, as they are equally appropriate. To few beings in this age is it given to look back over a life that spans four score years. To still fewer is it given to look down such a vista of years with eyes undimmed, mental faculties alert and unimpaired, and figure unbent by the weight of years and the cares of life, but it is, indeed, a unique privilege to review in retrospect four score years of life so filled with unselfish service to one's fellow-men as has fallen to the lot of Dr. Lewis. It is worthy of remark, too, that these two generations of practice of Dr. Lewis have been those the most active in the history of the progress of medicine. Dr. Lewis came on the stage of practice at a very busy time in medicine, just two decades after the popularization of anesthesia in 1846 by Morton. The epoch-making work of Lister, first published in 1867, was just beginning to make itself felt in this country. I well remember in 1878 how an assistant of Sir Joseph Lister came over to this country and paid a visit to our hospital one morning when I was Dr. Logan's interne. He desired to show us the antiseptic method of Lister and asked for a case to apply the dressing. I had such a conception of the wonderful virtue of this dressing that I presented him with a case of suppurating disease of the leg on which a liquid glass bandage had been applied with a fenestrum through which the dirty pus could be seen oozing. When the gentleman looked at this case his countenance fell; he made only the comment that this was not a suitable case to apply the dressing, and merely showed us how the dressing was used. I had had the idea that there was nothing to do but put the dressing on and all would be well. This illustrates the fact that the Lister procedure was slow in making itself felt in this section of the country. Dr. Lewis was in the most active period of his professional life at this time, and gynecology was at a very low ebb. I had myself seen only one case operated on for removal of an ovarian cyst by Dr. Chopin in which the antiseptic system was partially carried out. When Dr. Lewis became professor of gynecology he took up the study of the branch with enthusiasm, and what was known about gynecology at that time and for some years afterward in this section, centered about Dr. Lewis. Even after Dr. Lewis had been practicing his specialty for a number of years it was well known that he had himself not seen anybody else operate except on an occasion when a society met in this city and some of the visiting gynecologists were requested to operate, and truly his light was hid under a bushel. I remember Professor Dennis some years ago while on a visit to this city remarked to me that he understood there was a man by the name of Lewis who, he had been told, had done more gynecological work than almost any man in this country, and yet he had not heard of him until he paid this visit to New Orleans. Dr. Lewis used to say of himself that once when he was in New York he saw a prominent gynecologist coming down the street and he dodged him, so that even on a visit to New York he did not see the work done by other men. I mention these incidents to show that his work in gynecology was entirely built up out of his own head with the assistance he got from reading the literature of the subject, yet it was well known that his work was equal to that of any done in the country. Most of the men prominent in gynecology today owe largely their efficiency in this line of work to Dr. Lewis.

Dr. Lewis is one of those men who seem never to get old. I fully expect that he will go to the end of his century. He, like Ulysses, felt

"How dull it is to pause, to make an end,
To rust unburnished, not to shine in use."

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart throbs.
He most lives who thinks most, feels the noblest, acts the best."

When a man has lived as Dr. Lewis has lived, we never expect him to grow old. At least he will live long in our hearts as well as, I was going to say in literature, but unfortunately Dr. Lewis has not contributed his share to our literature. He acknowledges himself having operated on thousands of cases, but these are lost to the profession because truly he has hidden his light under a bushel.

I hesitate, gentlemen, to go further than this as I did not expect to make an address and did not prepare one. I certainly feel fortunate in coming after Dr. Matas, who has left so little to be said that should be said, that I will not be doing amiss in not attempting to go further.

ADDRESS TO DR. E. S. LEWIS.*

By DR. E. DENÈGRE MARTIN.

I have no doubt that all here present share with me the great pleasure of this occasion. I would like to recount a few pleasant experiences in my association with Dr. Lewis, for many times have I assisted the doctor in his operations to the tune of "There'll be a hot time in the old town tonight," but the hour is late and refreshments await us. I shall therefore confine myself to the task assigned me in closing the program; I cannot let the opportunity pass, however, without saying that Dr. Lewis was the one teacher from whom we learned the most practical lessons. His lectures were always replete with facts and personal experiences interestingly told.

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*Read before the Orleans Parish Medical Society, April 24, 1922.

Why, my dear doctor, when it was learned that you were to read a paper before this Society, it was suggested and unanimously voted that we make it a ''Lewis Night,'' and in answer to the esteem, love and reverence with which you are held by your fellow-men, I have but to point to this assembly. We have all come here tonight to do honor to you, and, in a manner, to show you how we feel towards you.

You hold, my dear sir, a most unique position. Not only have you practiced longer than any physician who has preceded you, but you have apparently outlived your enemies, for we have not been able to discover any.

We are assembled here tonight not only to listen to your most interesting and instructive paper, but to convey to you by a small token of our regard, our high appreciation of your friendship, and I am asked to present you with this Loving Cup, on which the inscription reads:

> "Presented to Dr. Ernest Sidney Lewis, April 24, 1922, by members of the Orleans Parish Medical Society, in commemoration of the completion of his sixtieth year in the active practice of his profession, as a token of their love and esteem for the Man, Soldier, Teacher and Physician, 1862-1922."

We know that you have often tasted of the cup of sorrow and disappointment; we now present you with this cup of happiness and contentment, and as we wish it to be a solace to you in your remaining years, we have filled it with good wishes to cheer you in your hours of leisure.

You will need no monument to proclaim your fame, no statue to grace a hall, for your kindly words and noble deeds will e'er remain, engraved, on the hearts of all.

WELCOME ON BEHALF OF LOCAL PROFESSION.*

By DR. FAYETTE C. EWING, President Rapides Parish Society.

The Quality of Distinction and the Medical Profession.

In your presence I am reminded of a great convention, long, long ago, the convention that nominated Grover Cleveland for the presidency the second time. The democrats had been in power for four years, were militant in their attitude, and a great orator had been selected to sound the keynote of the campaign. Fifteen thousand souls were gathered there in St. Louis, and when the long-anticipated moment arrived, not a rustle was heard—every ear was attuned to expectancy. Daniel Daugherty, one of the foremost political orators of the day, stepped to the front of the stage, and elevating his arms over the multitude, said, slowly and with due emphasis: ''I greet you my countrymen. In your presence I bow to the majesty of the people!''

Paraphrasing those opening words, I greet you, my confreres. In your presence I bow to the majesty of the medical profession of Louisiana! For you bring with you what Matthew Arnold calls ''the quality of distinction.'' A quality which he tells us ''the world is impatient of; chafes against it, rails at it, ridicules it, hates it; yet, in the end, receives its influence and undergoes its laws.'' The world rails at you, ridicules you, makes you the butt of cheap jokes in the magazines, and caricatures you in the newspapers. It calls you ''Doc'' as it does the street fakir, the chicken-remedy man, the jazz professor, and the voodoo. It calls Tom, Dick and Harry ''Doc,'' but after all, the world knows a silk purse from a sow's ear. Matthew Arnold further tells us that this quality of distinction ''procures that a popular poet shall not pass for a Pindar, nor a popular historian for a Tacitus, nor a popular preacher for a Bossuet,'' and I will add, that it procures that the popular chiropractor, and the popular osteopath, and the popular Christian Scientist, shall not for long pass as physicians. Like countless other fads and fancies that have infested the medical profession, they have their day, and cease to be. Of them it may be said with the poet:

''How fast does system follow system,
From sunshine to the sunless land.''

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*Delivered before the Louisiana Medical State Society Meeting, April 11 to 13, 1922.

You all recall the incident in the play of Hamlet, how, after the revelation of the ghost to Hamlet and his friends, Horatio and Marcellus, Hamlet invokes secrecy, and finally exclaims: "And now, gentlemen, without more circumstance at all, I hold it fit that we shake hands and part; you as your business and desire doth point, for every man hath business and desire, such as it is!" Such as it is! Gentlemen of the medical profession, to what does your business and desire point? To such as these: To that insane asylum over there on the hill "to minister to a mind diseased, pluck from the memory a rooted sorrow, raze out the written troubles of the brain, and with some sweet, oblivious draught cleanse the stuffed bosom of that perilous grief that weighs upon the heart." Or, a little further, to that veteran's hospital, to lay your hands upon the maimed and the halt, that those young men may again be as strong and lusty as an eagle, and "shoulder their crutch to show how fields are won." Or to unstop the ears of the deaf that they may "hear the voice of the charmer when she charms never so wisely," and, sometimes, to open the eyes of the blind that they may see "the sunshine bloom and wither on the hill like any hill-flower." Yours is the business to solve the mystery of human pain and banish it from the body; to rebalance the mind and readjust family relations as counselor and friend.

You bear with you the quality of distinction in more than these. Yours is the only business that seeks to destroy its income by eradicating its source of revenue. You toil in noxious laboratories among deadly germs that humanity may be free from infection. You present your bodies a living sacrifice to experimental inoculation, or to the bites of venomous insects, to test the transmission of death. When pestilence breaks out, you do not consider yourselves or your loved ones, but enter into the Valley of the Shadow, however dark, "gentlemen unafraid."

When did a physician ever become panic-stricken when the Grim Reaper stalks through the land and swings his scythe? Others whose mission it was to succor the suffering and comfort the dying, have sometimes answered as did the ungracious guests invited to the rich man's feast in the Biblical story, "I pray thee have me excused." But though it be into the jaws of death, the physician's "fate cries out, and makes each petty artery hardy as the Nemean lion's nerve."

You are the guardians of the public health, and often yours is a criticised and thankless task. For your labor you take what is given you, and, if it be nothing, you receive your recompense in the "rapture of pursing." Night and day, in heat and cold, rain or shine, sick or well, you are at the beck and call of prince and pauper, and dead-beat alike. Should your enemy be suffering, or he who has defrauded you, you consider them only as human beings in pain, and answer to their summons.

Yours is a holy business. You stand at the natal bed when a newborn baby weeps whilst all around it smiles; you minister at another bedside when a passer smiles and all around him weep.

Yours is a priest-like task, for, when there is no priest, and you are unable to save the body of the gasping infant to this troublous world, you baptize it into regeneration.

Gentlemen, we who reside in this little City of Alexandria, think it has its distinction, too. We call it the hub city of Louisiana, and sometimes we flatter ourselves that we do things differently. Other cities of corresponding size offer the trite but friendly old word welcome to express their hospitality, but Alexandria does things more poetically. Down there at our gateway you will see an illuminated sign, with a heart thereon, and it tells you that Alexandria is "in the heart of Louisiana." Gentlemen of the Louisiana State Medical Society, you are in the heart of Louisiana—in the heart of Alexandria; we think of you as did the noble prince of Denmark of his beloved friend Horatio, we "bear you in our heart's core, aye, in our heart of hearts."

Nearly three thousand years ago old Homer said what was true yesterday, today and forever, or as long as there are heart-throbs and heartaches to test the pulse of human friendship:

> "True friendship's law is by this rule exprest,
> Welcome the coming, speed the parting guest."

And so we give you our hearts and our hands. In behalf of the Rapides Parish Medical Society, I tell you that we are proud to be associated with you upon this auspicious occasion; our citizenry feel the distinction of your presence. We shall be loth to "speed the parting guest," but when we do it will be "God-speed" and "Come back," for, one and all, we wish that, like the poor, you might abide with us always.

PROCEEDINGS ORLEANS PARISH MEDICAL SOCIETY.*

Annual Report of the Librarian, 1921.

DR. S. C. JAMISON.

In 1920 the reorganization of the library of the Orleans Parish Medical Society was begun, and the year of 1921 has carried the work well on to completion. It is my pleasure to report that the cataloging is complete for all books in our possession published since 1890. Volumes published prior to that date are shelved, and easily accessible, and in the course of time, they, also, will be cataloged.

As the library is now open at night access to the reading room and to books is afforded to the profession from 8 a. m. to 5 p. m. and from 7-10 p. m.

During the past year some fifteen hundred volumes have been added to our collection, for eight hundred of which we are indebted to the late Dr. Wm. Kohlmann. New books have been chosen in an attempt to furnish the most recent information upon each branch of medicine, and the suggestion of various specialists in these branches has been respected in regard to their purchase.

I wish to take this occasion to again express the appreciation of the librarian for the bequests of Dr. Kohlmann and Dr. Mahler. A detailed list of the new volumes purchased is attached to this report. A full list of magazines is subscribed to each year, and this list now includes many foreign journals.

The finances of the library are as follows: The special library fund of $5,000, and an additional $1,000 voted by the board of directors of 1920, has been expended.

A budget for the year 1922 has been submitted to the outgoing board, and approved, as follows:

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*Read before the Orleans Parish Medical Society January 9, 1922. (Received for publication May 10, 1922—Ed.)

Books	$1,000
Amer. Institute of Medicine	250
Binding	300
Magazines	350
Supplies and Equipment	250
Miscellaneous	250
Total	$2,400

One thousand dollars of this total amount has already been voted by the outgoing board out of last year's surplus income, with the recommendation that the additional $1,400 necessary to complete this budget be approved and provided by the incoming board from our surplus income.

Allow me to urge upon the Society the great necessity for keeping the library as up-to-date as possible, inasmuch as it has now become worth while through its reorganization. If this is not done year by year, it will very promptly sink into a condition of a valueless collection of books. I believe that the new board will fully realize this necessity and their responsibility in the matter.

The library is used both day and night by the profession, by students and by nurses. There is an average of six to eight calls for books daily and constant calls for reference work.

I regret to report that our plans for collaborating with the library of the School of Medicine of Tulane University have fallen through. I wish to report, also, that at present, we are cramped for space, and that if we grow, as I am sure all of us hope we will grow, we shall soon overflow our present quarters. An effort will be made to obtain more space.

In closing, I wish to express my deepest thanks and appreciation of the splendid work and constant interest of Miss Mary Louise Marshall, Miss Irene Emerson, the Library Committee and the board of directors.

NEWS AND COMMENT.

RESOLUTIONS—The following resolutions were passed on April 20, 1922, by the Local Committee on Arrangements, American Medical Association, Convention April 26-30, 1920:

Whereas, after all expenses are paid, there is a surplus in the A. M. A. Convention Fund; and,

Whereas, the Executive Committee of the Local Committee on Arrangements knows that according to precedence the disposition of such surplus rests entirely with this committee; and,

Whereas, it is the desire of this committee that this fund should be applied to the greatest benefit of organized medicine in the State of Louisiana, and the question of securing a Journal for the State Medical Society has been a vital issue for the past few years; and,

Whereas, the opportunity of perpetuating a Journal which will soon reach its centenary and which is intimately associated with our medical traditions, presents itself, be it

Resolved, That the committee hereby decides to purchase the NEW ORLEANS MEDICAL & SURGICAL JOURNAL and present it to the Louisiana State Medical Society, to be used as its official organ, with the following conditions:

First. The Journal to be purchased for a consideration of five thousand dollars, of which three thousand dollars cash shall be paid out of the above surplus, and the balance of two thousand dollars to be paid by the Louisiana State Medical Society.

Second. The domicile of said Journal to remain in the City of New Orleans.

Third. All books received for review and all journals received in exchange or otherwise, to be donated to the Orleans Parish Medical Society.

And be it further resolved, That a multigraph be donated to the Orleans Parish Medical Society.

And be it further resolved, That a copy of these resolutions be sent to the American Medical Association, the Louisiana State

Medical Society, the Orleans Parish Medical Society, and also to the official journal for publication.

(Signed): A. E. Fossier, Chairman; T. J. Dimitry, P. J. Gelpi.

AT THE SIXTH ANNUAL MEETING OF THE AMERICAN CONGRESS ON INTERNAL MEDICINE, held at Rochester, Minn., the following officers were elected for the coming year: President, Dr. Sydney R. Miller, Johns Hopkins University, Baltimore; vice-Presidents, Drs. Henry S. Plummer, Rochester, Minn., and Stuart R. Roberts, Atlanta, Ga.; treasurer, Dr. Clement R. Jones, University of Pittsburgh, and secretary-general, Dr. Frank Smithies, Chicago.

WESTERN ELECTRO-THERAPEUTIC ASSOCIATION — The fourth annual meeting of this association was held in Kansas City, Mo., April 20-21. The following officers were elected for the ensuing year: President, Dr. T. Howard Plank, Chicago; first vice-president, Dr. H. H. Bowing, Rochester, Minn.; second vice-president, Dr. M. P. Springer, Tulsa, Okla.; treasurer, Dr. W. P. Grimes, Kansas City, Mo; registrar, Dr. J. R. Shumway, Pleasanton Kas.; board of trustees, Drs. Frank J. Iuen, Kansas City, Mo., Curran Pope, Louisville, Ky.

MUNICIPAL FLY CATCHER—With the purpose of making the city a flyless city, Riverside, Calif., has appointed a municipal fly catcher. Traps will be baited and a spraying machine used. Rounds through alleys, slaughtering plants and other places harboring flies will be made daily.

AMERICAN COLLEGE OF PHYSICIANS ELECTS OFFICERS—At the sixth annual meeting of this college, held in Minneapolis, the following officers were elected for the year 1922-1923: President, Dr. James M. Anders, Philadelphia; vice-presidents, Drs. Frederick Tice, Chicago, and Charles C. Bass, New Orleans; treasurer, Dr. Clement R. Jones, Pittsburgh; secretary, Dr. Frank Smithies, Chicago.

THE UNITED CIVIL SERVICE COMMISSION announces open competitive examinations for the following positions: Assistant and Junior Medical Officer (Psychiatry); Laboratorian and Assistant Laboratorian (Bacteriology); Dietitian, Public Health Service; Laboratorian and Assistant Laboratorian (Roentgenology); Associate in Clinical Psychiatry and Psychotherapy. Those interested should apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, or United States Civil Service Board, customhouse in their district.

BOARD TO ADMINISTER THE MEDICAL FELLOWSHIPS—The National Council has appointed a special board of eminent medical men to administer the National Fellowships in Medicine which the Research Council offers through special gifts to it by the Rockefeller Foundation and General Education Board amounting to $100,000 a year for five years. Those composing the board are: Dr. Victor C. Vaughan, Division of Medical Sciences, National Research Council, ex-officio, chairman; David L. Edsall, Professor of Medicine and Dean of the Medical School, Harvard University; Joseph Erlanger, Professor Physiology, School of Medicine, Washington University; G. Carl Huber, Professor of Anatomy and Director of Anatomic Laboratories, University of Michigan; E. O. Jordan, Professor of Bacteriology, University of Chicago; Dean Lewis, Professor of Surgery, Rush Medical School; W. G. MacCallum, Professor of Pathology and Bacteriology, Johns Hopkins University; Lafayette Mendel, Professor of Physiological Chemistry, Yale University, and W. W. Palmer, Professor of Medicine, Columbia University, School of Medicine.

MEDICAL RECORD SOLD—On April 22, the *Medical Record,* the last of the old independent medical weeklies, passed out of existence. The final issue as a separate publication appeared on that date, and announcement was made that it had been sold to, and combined with, the *New York Medical Journal,* now appearing semi-monthly. Throughout the fifty-six years of its service to the profession the *Medical Record* has had the same publishers and but two editors. Dr. George F. Shrady guided its course for the first thirty-eight years, and was succeeded by his assistant, Dr. Thomas L. Stedman, who has long been dean of American medical editors and widely esteemed. The famous old firm of William Wood & Company, the publishers, will now devote its energies entirely to the publication of medical books, in which service it has been engaged for 118 years.

THERE WAS A DEMONSTRATION of the new deep therapy X-Ray machine, by R. P. Kencheloe, E. E., at the Diagnostic Clinic, 3601 Prytania St., on May 22, under the auspices of the Kelly-Koett Co.

RUSSIAN MEDICAL COLLEGES RECEIVE MEDICAL JOURNALS—Ten of the leading medical colleges of Russia have received a large shipment of medical journals which were furnished to the Medical Division of the American Relief Administration by the Rockefeller Institute, says a cablegram from Moscow to the American Relief Administration headquarters. The message states that the Russian doctors have been "starved for medical literature and feel that they have been cut off from all medical progress for the past five years; hence, these publications satisfy the craving for recent scientific knowledge." Further shipments are reaching Russia, and will be distributed as rapidly as possible.

THE MID-SUMMER MEETING of the Southern Minnesota Medical Association will be held in Rochester, Minnesota, June 19-20, 1922.

PUBLICATIONS ON INDUSTRIAL HYGIENE—The International Labor Office requests all scientists and members of the medical profession, who are interested in social and industrial medicine, to be good enough to furnish to its Industrial Health Section, International Labor Office, bibliographical notes on their recent publications (the author's name, the title of the article, and the date and number of the periodical in which it appeared); also to forward if possible a reprint of such articles. In return, the International Labor Office will be pleased to supply its correspondents regularly with its bibliographical lists on Industrial Hygiene.

TUBERCULOSIS SCHOOL—The United States Public Health Service announces that a tuberculosis school similar to the one held last year will again be held from June 1 to 30, at the Government sanatorium at Oteen, N. C. The class will consist of 30 medical officers and 30 nurses, who will be drawn principally from other service hospitals. Admittance will also be granted to a few others identified with tuberculosis work in different parts of the country, although not employees of the government.

The first school graduated 22 physicians and 19 nurses who had been carefully selected from the 66 hospitals of the service.

GACETA CATALANA SUSPENDED—Announcement is made that the *Gaceta Médica Catalana,* of Barcelona, founded and edited by the late Dr. Rodriguez Méndez, has after forty-four years of existence suspended publication.

OFFER TO JOHNS HOPKINS UNIVERSITY—Conditionally upon Johns Hopkins University raising a million dollars, an offer of a gift of three million dollars has been made by an unnamed donor.

THE UNIVERSITY OF CINCINNATI College of Medicine has received an endowment of $224,000, which insures a gift of $7,000,000 from the Rockefeller Foundation, and $2,000,000 from the Carnegie Foundation.

DANGER FROM BUBONIC PLAGUE—After a trip of inspection, Dr. Rupert Blue, in charge of the United States Immigration Service in Europe, stated that virtually every port in the Near East is infected with bubonic plague, cholera and smallpox. He further stated that the United States would be threatened if any of the disease-infected immigrants reaching these ports were allowed to embark for this country. Facilities for disinfection are very meagre and in most instances do not exist at all.

THE COMMITTEE OF NATIONAL TUBERCULOSIS ASSOCIATION experimenting in Framingham, Mass., to demonstrate the possibilities of controlling tuberculosis in industrial communities, has published eight monographs explaining in full the various stages of the work. In this community of 18,000 population the death rate has dropped 67 per cent in five years. Public health clinics and school clinics have been established by the people, and through numerous other precautionary measures the infant mortality has been lowered 22 per cent. In the opinion of Dr. Livingston Ferrand, the committee's report proves that tuberculosis is a controllable disease.

NEW HOSPITAL FOR HOUSTON, TEXAS—Ground will be broken about June 15 for a four-unit Hermann Hospital in Houston, Texas, according to an announcement by the board of trustees. Approximate cost will be $600,000, and it is expected to have the building ready to receive patients within one year's time. The hospital as designed is intended to be one of the most modern and completely equipped in the state. One hundred and fifty beds will be devoted to charity patients, according to preliminary plans.

AT THE MEETING OF THE INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, held in Washington, D. C., April 25 and 26, the following officers were elected for the ensuing year: President, Dr. Geo. E. de Schweinitz, Philadelphia; secretary, Dr. Luther C. Peter, Philadelphia. Representatives of many foreign countries attended the meeting.

COMPLETES FIFTY YEARS OF TEACHING—Prof. Walter S. Haines will in June complete fifty years of teaching in the department of materia medica in Rush Medical College. As a tribute to this unusual record, Rush alumni gave a banquet in his honor during the recent meeting of the Illinois State Medical Association.

THE PORTLAND OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SOCIETY has changed its name to the Oregon Academy of Ophthalmology and Oto-Laryngology. The officers for the ensuing year are as follows: President, C. Gertrude French, The Dalles; secretary-treasurer, Dr. Andrew J. Browing, Portland.

RESEARCH FELLOWSHIP IN BACTERIOLOGY—Dr. Victor C. Vaughan, of the National Reserch Council, in Washington, announces that the Society of American Bacteriologists at its recent meeting in Philadelphia appropriated a fund in support of a Research Fellowship in pure bacteriology. Applicants for the fellowship must have the degree of B. S., or its equivalent. One hundred dollars a month is appropriated for the support of the fellow. Application for any information concerning the fellowship should be addressed to Dr. Victor C. Vaughan, Chairman of the Committee, National Research Council, Washington, D. C.

PERSONALS—Dr. C. C. Bass was elected a vice-president of the American College of Physicians.

REMOVALS—Dr. O. M. Chapman, from Bucyrus, Kas., to St. Maurice, La.

Dr. A. C. Achee, from Loreauville, La., to U. S. Marine Hospital No. 66, Carville, La.

Dr. A. A. Mattes, from El Paso, Tex., to New Orleans.

Dr. E. R. Harrington, from Minden, La., to Shreveport, La.

Dr. G. J. Hauer, from 1115 Maison Blanche, to Suite 205 Maison Blanche Annex.

Dr. S. J. Rosenthal, from 1115 Maison Blanche, to Suite 205 Maison Blanche Annex.

Dr. E. A. Bertucci, from 1115 Maison Blanche, to Suite 205 Maison Blanche Annex.

Dr. C. J. Bordenave, from 1115 Maison Blanche, to Suite 205 Maison Blanche Annex.

DIED—On April 30, 1922, Dr. L. M. Dampeer, Sr., of Crystal Springs, Miss., aged 91 years.

PUBLICATIONS RECEIVED.

THE MACMILLAN COMPANY, New York.

The Newer Knowledge of Nutrition, by E. V. McCollum, Ph.D., Sc.D., second edition.

A Text-Book of Clinical Periodontia, by Paul R. Stillman, D.D.S., and John Oppie McCall, A.B., D.D.S.

C. V. MOSBY COMPANY, St. Louis.

Management of the Sick Infant, by Langley Porter, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Lond.), and William E. Carter, M.D.

Radium Therapy, by Frank Edward Simpson, A.B., M.D.

The Place of Version in Obstetrics, by Irving W. Potter, M.D., F.A.C.S.

LEA & FEBIGER, New York.

Hayfever and Asthma, by Wm. Scheppegrell, A.M., M.D.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

Tuberculosis In Infancy and Childhood, by J. Claxton Gittings, M.D., Frank Crozier Knowles, M.D., and Astley P. C. Ashurst, M.D.

WASHINGTON GOV'T. PRINTING OFFICE, Washington, D. C.

The Chaulmoogra Tree and Some Related Species.

United States Naval Bulletin, Vol. 15, No. 4.

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MISCELLANEOUS.

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Transactions of the American Surgical Association, Vol. 39, William J. Dornan.

REPRINTS.

The Use and Abuse of Local Support, Also Motor Re-education in Human Readjustment or Orthokinetics, The Resources of "Systematized Rest, Isolation and Forced Feeding," by J. Madison Taylor, M.D.; Investigation On the Control of Hookworm Disease, 1. General Introduction; 2. The Description of an Apparatus for Isolating Infective Hookworm Larvae from Soils; 3. A Discussion of the Finding of Unsheathed Hookworm Larvae in the Soil; 4. The Relation of the Domestic Chicken to the Spread of Hookworm Disease; 5. The Domestic Pig and Hookworm Dissemination; 6. A Study of the Effect of Hookworm Control Measures On Soil Pollution and Infestation in a Sugar Estate; 7. An Epidemiologic Study of Hookworm Disease in a Cacao Estate; 8. Experiments on the Migration of Hookworm Larvae in Soils; 9. On the Position of the Infective Hookworm Larvae in the Soil; 10. Experiments on the Length of Life of Infective Hookworm Larvae in Soils; by William W. Cort, Ph.D., James E. Ackert, Ph.D., Donald L. Augustine, B.S., Florence King Payne, M.D., and George C. Payne, M.D.; Public Health Service No. 719.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for April, 1922.

CAUSE.	White.	Colored.	Total
Typhoid Fever		2	2
Intermittent Fever (Malarial Cachexia)			
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	1		1
Diphtheria and Croup	2		2
Influenza	7	6	13
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	42	28	70
Cancer	30	5	35
Rheumatism and Gout		1	1
Diabetes	4	1	5
Alcoholism			
Encephalitis and Meningitis			
Locomotor Ataxia			
Congestion, Hemorrhage, Softening of Brain	18	11	29
Paralysis	2		2
Convulsions of Infancy			
Other Diseases of Infancy	16	14	30
Tetanus			
Other Nervous Diseases	5	2	7
Heart Diseases	66	36	102
Bronchitis	3	1	4
Pneumonia and Broncho-Pneumonia	11	12	23
Other Respiratory Diseases	2		2
Ulcer of Stomach		2	2
Other Diseases of Stomach		2	2
Diarrhea, Dysentery and Enteritis	6	6	12
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	2		2
Other Diseases of the Liver	2	1	3
Simple Peritonitis			
Appendicitis	7	1	8
Bright's Disease	24	14	38
Other Genito-Urinary Diseases	9	6	15
Puerperal Diseases	5	3	8
Senile Debility	4		4
Suicide	5		5
Injuries	23	9	32
All Other Causes	19	8	27
Total	318	171	489

Still-born Children—White, 17; colored, 22; total, 39.
Population of City (estimated)—White, 295,000; colored, 110,000; total, 405,000;
Death Rate per 1000 per annum for Month—White, 12.93; colored, 18.65; total, 14 49. Non-residents excluded, 12.18.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	30.05
Mean temperature	73.
Total precipitation	3.81 inches

Prevailing direction of wind, south.

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